TEACHERS' PERCEPTIONS OF THEIR PRINCIPALS' DIGITAL LEADERSHIP PRACTICES IN GAUTENG WEST

by

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DEDICATION

This work is dedicated to:

My saviour, The Lord Jesus Christ who continually guides and inspires me through his perfect love and grace, to the purpose for which he created me and who opens doors of opportunity for me that would otherwise be closed. Praise be unto you Lord Jesus.

My husband and soul mate, Ishan Dasruth for his consistent patience, gentleness, kindness, wisdom, inspiration, understanding, encouragement, support and unfaltering love and affection during my demanding journey. For the many cups of coffee and tea and numerous sacrifices that he made for me and for his belief in me that lured me on to bring my research to a fruitful completion. My "everyday" is blessed because God allows me to start and end it with Ishan.

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"You are not a teacher, but an awakener".

DECLARATION

I, Judy Dasruth, declare that this research dissertation: “Teachers’ perceptions of their principals’ digital leadership practices in Gauteng West” is my own work and has not been submitted at any other institution. All sources I consulted that have been quoted were acknowledged.

This dissertation has been submitted with the permission of my supervisor, Professor Clive Smith.

Signed: _____ Date: October 2020

Judy Dasruth

ABSTRACT

Disruptive digitals and innovations in the fourth industrial revolution are rapidly changing the education landscape. The prominent presence of digitals in everyday life has placed an increased focus on learning that is relevant for the digital age and this necessitates principals to change the way they lead learning in schools. As such, principals' digital behaviours and activities that facilitate the change process towards cultivating a digital school culture are crucial in the successful integration of digitals into the digital age learning environment. This study explored teachers' perceptions of their principals' digital leadership practices in three primary schools in the Gauteng West District in South Africa. The rationale for doing this research was that digital leadership supports digital age learning and as such principals' digital leadership practices that support the needs of today's digital students, which seems to be the way forward, has not fully yielded its intended purpose in South African public schools.

In the context of this background, a generic qualitative approach was used within the interpretive paradigm. Three detailed focus group interviews with 16 teachers at three public schools with a focus on principals' digital leadership was conducted. Transformational leadership theory with a specific focus on the four core leadership practices and connectivism learning theory provided a purposeful articulation of the phenomena of principals' digital leadership practices for leading digital age learning and was thus employed as the lens through which this study was viewed.

This study showed that teachers perceived that their principals' current digital leadership practices focused mainly on digitising administration and management, with limited or no focus on teaching and learning. The findings of the study support the need for principals and teachers to expand their knowledge of digital leadership to attain a deeper understanding of the phenomena and to inform their practices and also suggest that a system-wide change across the South African education sector is needed to support principals in the transformation of schools to an authentic digital age learning environment and consequently a meaningful digital school culture.

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LIST OF ABBREVIATIONS AND ACRONYMS

DBE -	Department of Basic Education
DDD -	Data-Driven Districts
DoE -	Department of Education
GDE -	Gauteng Department of Education
GOL -	Gauteng Online
HOD -	Head of Department (school department)
ICT -	Information Communication Technologies
ISIP -	Internal School Improvement Plans
ISTE -	International Society for Technology in Education
IQMS -	Integrated Quality management System
LTSM -	Learning Teaching Support Materials
MEC -	Member of the Executive Committee
NAPTOSA -	National Professional Teachers' Organisation of South Africa
NDP -	National Development Plan
NEEDU -	National Education Evaluation and Development Unit
NGO -	Non-Governmental Organisation
PAM -	Personnel Administrative Measures
PGP -	Professional Growth Plan
PLC -	Professional learning communities
PLN -	Personal Learning Network
SA SAMS -	South African School Administration Management System
SAPA -	South African Principal’s Association
SGB -	School Governing Body
SMS -	Short Message Service
TIMSS -	Trends in International Mathematics and Science Study

UNESCO - United Nations Educational, Scientific and Cultural Organization

US - United States

VoIP - Voice over Internet Protocol

VUCA - Volatile Uncertain Complex Ambiguous

WEF - World Economic Forum

CHAPTER ONE

ORIENTATION TO THE STUDY

1.1 Introduction

> "We must begin to change the way we lead"
>
> Sheninger (2014, p. xxii)

This chapter provides an orientation to my research undertaking and gives an overview of my entire study. Chapter One intends to capture the interest of the reader and thus provides insight into the background and rationale for exploring teachers' perceptions of their principals' digital leadership practices in leading digital age learning in their schools. The conceptual framework, importance of my study, problem statement, and the aim and objectives of my research question as well as the research approach of my study are also outlined in this chapter, and a summary of each chapter is given.

International educational researchers, leaders, reformers, and consultants are calling for a paradigm shift in leadership that is relevant for the digital age (Couros, 2015; Hunt, 2015; Jameson, 2013; Mishra, Henriksen, Boltz, & Richardson, 2016; Prensky, 2005; Richardson, Flora, & Bathon, 2013; Sheninger, 2014). This comes in the wake of the fourth industrial revolution which has ignited an exponential growth of digital technologies (Schwab, 2017) which continue to impact and change societies' way of life including education across the world (World Economic Forum (WEF), 2017). The incorporation of Information Communication Technologies (ICTs) in schools has sparked a technological shift away from traditional leadership (Aksal, 2015) over the greater part of the last two decades to leadership that focuses on leading technological practices in schools (Jameson, 2013).

Digitals rather than technology will be the dominant word of choice used in my study. Digitals refer to the way things are done (Dörner & Edelman, 2015) while technology refers to physical components which comprise of products, e-tools, devices, applications, management systems, processes, and informational components (Wahab, Rose, & Osman, 2012) used to simplify tasks, extend abilities, and solve problems. Since this study sought to examine principals'

digital leadership practices, digitals rather than technology is more suited to this study which focuses on behaviours and practices that arise from the use of technology (Cloete, 2017).

The relentless onslaught of digitals on education have rendered current leadership styles inadequate and unfavourable for digital age learning. Theorists have therefore rethought school leadership (Greaves, Hayes, Wilson, Gielniak, & Peterson, 2012; Hunt, 2015; Kemp, 2015; McGonagill & Doerffer, 2011; Prensky, 2005; Sheninger, 2014) to include new perspectives that transcend "mandate, function or official capacity" (Greaves et al., 2012, p. 4). Current leadership models which focus on managing rather than leading do not consider radical initiatives needed to drive digital transformation. This transformation is a complete shift into digital age learning (Bates, 2015; Greaves et al., 2012) and raises questions about whether or not principals are in touch with the evolving digital shift in education, the opportunities it presents, and the needs of teachers and students in digital age learning.

Leadership for digital age learning is less about being occupied with policies and mandates and more about "empowerment, support and embracement" (Sheninger, 2014, p. xxii). Principals who continue to use dated leadership models and are unwilling to adapt to the new digital age environment, can push their organisations towards becoming irrelevant in an age of digitisation (Bates, 2015). Leadership in digital age learning environments will thrive if principals can adapt to the exponential pace of change (Bates, 2015).

This adaption means that principals need new skills, new behaviours, and innovative and strategic thinking to meet the digital needs of students and teachers in the digital age which are dissimilar to those required in the 20th century (Bates, 2015; Mamlok, 2017; Stevenson, Hedberg, O'Sullivan, & Howe, 2016). Therefore, innovative ways of thinking and applying that thinking in leadership to anticipate changing needs and evolving skills of students and teachers are required to lead a new way of learning (Couros, 2015; Sheninger, 2014).

One of the prominent leadership styles currently receiving a lot of interest in schools is digital leadership which is the focus of this study. Digital leadership, according to contemporary educational thinkers, is a leaders' strategic mental shift toward new, fluid, and innovative skills, behaviours, activities, and positive thinking aimed at pushing a future-directed vision of learning based on a deep understanding of the relationship between people and digitals (Couros, 2013; Hunt, 2015; Kampylis, Punie, & Devine, 2015; Ross, 2014; Sheninger, 2014).

As such, digital leadership entails a paradigm change within the conventional building blocks of leadership, as Groenewald (2016, "Does leadership," para. 1) strongly argued:

> Considering the escalating digital and leadership revolutions, let us be blatantly honest for a moment. If you have your finger on the pulse you will notice that most of the current methods of preparing our leaders are not working, as they might have in the past. Or, perhaps, when we consider the current state of affairs, they never really did – which is why we are where we are. Because the world we live in and its people have changed exponentially and become vastly different – almost overnight – this truth is becoming more apparent! We cannot but ask bolder questions.

In response to calls from academics, digital leadership offers an optimistic possibility to guide school principals into the unchartered future of education as well as to ask bolder questions, to provoke, expand and change school leadership that is relevant for digital age learning.

1.2 Background to the Study

> "If we lead today's schools as we led yesterday's, we rob them of tomorrow"
>
> Adapted from John Dewey (Gilpin & Gustafson, 2015, p. 33)

Klaus Schwab, founder and executive chairman of the WEF stated in his 2017 book, *The Fourth Industrial Revolution* that advances in technology will "fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before (Schwab, 2017, p. 1). It is within this world-wide context of unprecedented digital disruptions that digital age learning environments are evolving. The most creative explanation of a digital age learning environment that I found in the research was an intriguing extended metaphor by Thomas and Seely Brown (2011) that I adapted for this study: digital skills, tools, and resources "act as a set of nutrients, constantly selected and incorporated into a petri dish" (p. 117) which provides the stimulus for a new way of learning and creating knowledge. Consequently, the culture that develops in the petri dish is a portable, connected, and collaborative "inquiry that harnesses the resources of the network and transforms them into nutrients within the petri dish environment", turning it into a digital age learning environment (Thomas & Seely Brown, 2011, p. 117).

A digital age learning environment is about constant connection and constant information flow. The volume of material that students receive can become overwhelming. Teachers' new practices will include, amongst others, helping students learn how to interpret what information is relevant, appropriate, and useful and principals' new practices will include, amongst others, helping teachers develop competencies to achieve this task (Bates, 2015).

In digital age learning environments students are reinventing traditional school environments. This reinvention comes in the wake of their evolving digital age learning styles and needs which provoke a shift in principals' traditional leadership styles. This shift is necessary to meet students' digital age learning needs. Connected learning (Downes, 2012; Siemens, 2005) is a crucial part of these changing learning styles. Based on the premise that connected learning disrupts outdated constructs of leadership that exist in most schools today where leadership is slow and rigid, principals are expected to tactically shift their business as usual approach (Couros, 2015; Sheninger, 2014). If principals are to effectively lead connected learning, they need to firstly acknowledge that knowledge has shifted onto networks (Seely Brown, 2012). School boundaries need to dissolve for connected learning to thrive in digital age learning. This has significant implications for school leadership. Traditionally, individuals attained knowledge from sources such as textbooks, historical accounts, and authorities. Now that knowledge has shifted onto networks it has grown exponentially with no limitations (Seely Brown, 2012). This infinite knowledge provides a platform for students to collaborate, connect, create, and learn with diverse knowledge holders. Principals' activities are integral in the acquisition of digital tools and resources to facilitate collaborative learning in digital spaces (Aksal, 2015; Greaves et al., 2012).

Digital tools and platforms give students interactive learning autonomy through connected learning to "learn through social networks and by participation, collaboration and immersion in digital spaces to seek, share and create knowledge for self-realisation" (Alam & McLoughlin, 2010, p. 13). Mobile learning, the Internet of Things, web tools, cloud computing, flipped classrooms, social media, virtual reality, and online learning networks (Aksal, 2015; Greaves et al., 2012) each "provide an excellent vehicle for making global connections" (Alam & McLoughlin, 2010, p. 13).

Connected learning is also supported by principals' digital skills (Grand-Clement, 2017) and principals therefore need to develop their personal digital skills to nurture connected learning. There are employer based and Non-Governmental Organisation (NGO) initiatives in the South

African education sector aimed at developing principals' digital skills. However, these initiatives are insufficient (Mestry, 2017) and principals are left largely on their own to develop these skills (Powers & Green, 2016).

Apart from developing their digital skills, principals also need to engage in constant learning by extending their knowledge through connections. Principals can establish connections through a Personal Learning Network (PLN) to learn, share, and collaborate (Trust, Krutka, & Carpenter, 2016) and thus better prepare themselves to satiate students' needs as well as guide them on how to leverage a connected community of teachers, peers, and experts to learn (Ito et al., 2013).

The reality is that digital disruptions are here to stay and are forcing principals to either adapt or become irrelevant (Bates, 2015). Principals must be quick to respond to digital changes lest their schools be left behind. They have a duty to understand the patterns of digital transformation and its disruptions in all facets of schooling and alter their behavioural reactions accordingly. Principals need to instinctively shift their attention from the threat of new digitals to the advantages and opportunities that they bring (Couros, 2015; Sheninger, 2014; 2019). Moreover, the acquisition of hardware and software does not automatically lead to effective digital age learning (Richardson et al., 2013). Its success depends on principals who can lead sensibly.

In developed countries, digital disruptions and digital age learning are the accepted norm. However, this study is based in South Africa which is a developing nation. This brings into the spotlight South African education's level of readiness for digital age learning and digital leadership. Digital initiatives in the South African education sector is evident in the policies and initiatives of The Department of Basic Education (DBE). These include the White Paper on e-Education (SA DBE, 2004); broadband policy for schools and ICT skills development in the school curriculum (SA Department of Communication [DoC], 2013); pillar 6 of the Gauteng five year 10 pillar education programme that focuses on ICT in Education (Lesufi, 2014); Operation Phakisa: the first paperless classrooms in Soweto (Motshekga, 2015); Vodacom online e-school portal in partnership with the DBE (Motshekga, 2017); digitalisation of workbooks/textbooks and the launch of the iCloud and DBE TV (Surty, 2015); the Thutong Portal: DBE's educational electronic content repository (Motshekga, 2016); Ukufunda virtual school launched in 2014 (Surty, 2015); and educating our children for the fourth industrial revolution initiative that focuses on schools of specialisation, twinning and ICT and e-learning

programmes (Motshekga, 2018). Such advances and initiatives indicate that South Africa has digital programmes that principals can draw from to lead digital age learning. However, Mhlanga and Moloi (2020) indicated that the recent outbreak of the Coronavirus pandemic in late 2019 revealed low levels of digital readiness in the South African education sector as few public schools continued to function in digital teaching and learning spaces during the pandemic, suggesting that the education sector is not ready for digital age learning.

The unarguable fact is that digital disruption in education is real and as schools adapt to this new reality so too principals must recognise that their own roles and responsibilities are similarly disrupted and must therefore also adapt. In order to create and lead digital age learning environments, principals need to embrace new skills, behaviours, and progressive ways of thinking now, and continuously in the future to deal with digital disruptions (Couros, 2015; Sheninger, 2014).

International and national standards for principals can guide principals' leadership behaviours and activities. Domeny (2017, p. 11) maintained that the aim of professional standards is to "improve professional practice". Digital age learning will be determined by how well a principal can connect the dots of all the standards set out by international and national authorities in education to ensure that their school becomes a nerve centre for learning. International standards developed by the International Society for Technology in Education (ISTE) (2018) and national standards for principals gazetted in the policy on the South African Standard for Principalship (SA Department of Basic Education [DoBE], 2016b) have been developed to guide principals' leadership approaches for digital age learning.

This study proposed to investigate teachers' perceptions of their principals' digital leadership practices in public primary schools in Gauteng, South Africa. This province was selected due to its reputation for leading technology innovation in education. Mlambo, Rambe, and Schlebusch (2020, p. 1) noted that Gauteng is one of two provincial departments of education among nine departments in South Africa that "have developed projects aimed at ICT integration and are pioneers in the pedagogical use of technology" aimed at digitising classrooms.

1.3 Conceptual Framework

The conceptual framework for this study was underpinned by the transformational leadership theory and connectivism learning theory.

Kenneth Leithwood's transformational leadership theory contends that the four core leadership practices are continuously refined and improved upon (Leithwood, Harris, & Hopkins, 2008; Leithwood & Seashore Louis, 2012). Leithwood et al. (2008) identified four core leadership practices of building vision and setting direction; understanding and developing people; redesigning the organisation; and managing the teaching and learning programme. There is a consensus amongst scholars in the literature, that the four core leadership practices and the educational context in which they operate in are essential for successful leadership and ultimately for student learning (Leithwood et al., 2008; Leithwood, Seashore Louis, Anderson, & Wahlstrom, 2004; Leithwood & Riehl, 2003; 2005; Romain, 2018). The four core leadership practices are dynamic in nature and valuable in any educational setting and therefore well suited to digital leadership.

A second framework for this study relates to connectivism as presented by Siemens (2005) and Downes (2012). Connectivism learning theory was established in 2005 through the exploration of the theories of chaos, network, and self-organisation. Connectivism is a learning theory for the digital age (Siemens, 2005) that explains how internet digitals have created innovative ways for people to learn and share information through connections (Downes, 2012; Siemens, 2005). Siemens (2005) contended that connectivism has implications for leadership in digital contexts which has enabled the examination of leadership in digital environments. The main principles of connectivism include autonomy, connectedness, diversity, and openness, and these are focused around connecting nodes which can be individuals, groups, systems, fields, ideas, or communities (Siemens, 2005). In leading digital age learning principals need to nurture connections between nodes through resourceful, connected, collaborative, and networked practices (Downes, 2012; Siemens, 2005).

1.4 Importance of this Study

The literature reviewed in Chapter Two reports a few international studies that discussed digital leadership and a dearth of literature that directly discussed the consistency, value, beliefs, and approach of principals' digital leadership in the South African context. This gap in the literature

indicates a need for studies that focus on principals' digital leadership in South Africa. As such, exploring principals' digital leadership practices in South African public schools would be beneficial in adding to the existing body of knowledge. My study investigates teachers' perceptions of their principals' digital leadership practices in leading digital age learning and it is the hope of this study to raise interest, awareness, and support for digital leadership.

It can be argued that school principals' digital leadership practices in leading digital age learning can have strategic implications for leadership and successful school transformation. The development of these leadership practises is crucial as "training and development of principals can be considered as the most strategically important process necessary to transform education successfully" (Mestry & Grobler, 2002, p. 22). This study can contribute to the field of educational leadership by providing empirical evidence into the perceived current digital leadership practices of selected principals. This may be useful in providing data that could steer a shift towards a much-needed digital contextualisation of principals' training and development (Meyer & Gent, 2016).

1.5 Problem Statement

Hanna (2017, para. 3) pointed out that leading digital transformation is "not a technological fix, a blueprint plan, a one-off event, or a one-size-fits-all strategy" but a continuous social learning process. Principals need ongoing support and guidance to change to using new skills and behaviours to meet the demands of digital age learning. Since principals are the chief accounting officers of all aspects of school life, they are the pivotal dynamic in determining the extent of digital age learning in their schools.

The expectations in the form of international and national standards for principals to lead digital age learning exist, but the question is how principals practically accomplish this task. Since there is a dearth of literature around the topic of principals as digital leaders in digital age learning, more empirical studies are needed on digital leadership practices of principals. It is hoped that these practices might raise awareness among principals on leading digital age learning in their own schools.

In light of this background, my research question is:

- What are teachers' perceptions of Gauteng primary school principals' digital leadership practices for leading digital age learning in their schools?

The sub questions are:

- What are the perspectives that teachers think they have about their principal's digital leadership practices in leading digital age learning?
- What are teachers' perspectives on the support needed to enhance principals' digital leadership?
- What are teachers' perspectives on the challenges to principals' digital leadership?

The general aim of my study was to investigate teachers' perceptions of their principals' digital leadership practices for leading digital age learning in their schools. The following objectives were intended to achieve the aim of the study:

- To identify perspectives that teachers think they have about their principal's digital leadership practices in leading digital age learning.
- To identify the support that teachers think is needed to enhance their principals' digital leadership.
- To identify what challenges teachers think pose a barrier to principals' digital leadership.

I will now provide a brief description of the research approach used in the study, having outlined the research problem, the research aim, and objectives.

1.6 Research Approach

This inquiry was underpinned by the interpretivist paradigm. According to Lincoln and Guba (1985) the interpretivist paradigm is based on the assumption that social reality is not singular or objective, but is rather shaped by human experiences within natural, social contexts and the subjective interpretations of participants. Interpretivism provides a philosophical framework for the generic qualitative data generation method used in this study since it endorses exploring and interpreting teachers' perceptions to seek an understanding of their principals' digital leadership practices to best answer the research question. According to Creswell (2002) qualitative research design plans to explore, understand and interpret social phenomena within its natural setting.

Focus group interviews will be used in this study. According to Denscombe (2007, p. 115) "focus groups consists of a small group of people, usually between six and nine in number,

who are brought together by a trained moderator (the researcher) to explore attitudes and perceptions, feelings and ideas about a topic". Six participants from three schools were selected to participate in the focus groups for this study to explore their perspectives of their principal's digital leadership practices in leading digital age learning in their schools. Purposive sampling was used to select participants at three public primary schools in the Gauteng West district for the focus group interviews. The qualitative research in this study also involved document analysis of the schools' websites and official Facebook profiles to seek evidence of principals' digital practices. Individual interviews with principals were conducted after the focus group interviews for triangulation. Braun and Clarke's (2006) thematic analysis method as cited in Clarke and Braun (2013) was used for the analysis of qualitative data. This involves familiarisation with the data, coding into initial categories, searching for themes, reviewing themes, defining themes, and doing a write up.

In ensuring trustworthiness in this inquiry, I maintained credibility through the use of data collection triangulation and referential adequacy as a means to check preliminary findings and interpretations against the raw data in the research process (Lincoln & Guba, 1985; Merriam, 1998). To ensure dependability, I ensured to the best of my ability that the findings of this study were true to the data collected. To safeguard transferability, I engaged in the use of rich, thick descriptions in the research process and later give suggestions about transferability, but it will be up to the reader to decide whether or not the findings are transferable to another context (Guba & Lincoln, 1989; Lincoln & Guba, 1985); in establishing confirmability, the results of this study were ensured through the use of a physical research audit trail (Carcary, 2009).

1.7 Ethical Considerations

The research was conducted within the ethical requirements and procedures of the University of Johannesburg.

The following methods were used to ensure ethical conduct during the research process. Approval from both the Higher Degree Committee and the Ethics Committee of the Faculty of Education at the University of Johannesburg was obtained to conduct this study. Permission from the Gauteng Department of Education (GDE), the principals, and school governing bodies of the participating schools was obtained.

The interviewees were asked to provide informed consent in writing. Participants were assured that their participation in the study was voluntary and that they had the right to withdraw at any

time without any penalty. Participants were assured that their identity and that of the schools would be kept confidential and pseudonyms would be used in all documentation of the dissertation. All data would be kept secure and disposed of when the research was complete. Permission was also obtained from the interviewees to audio record the interviews. All sources of information used in this study were acknowledged to avoid plagiarism. It was pointed out to the participants at the outset that one of the possible risks associated with focus group interviews is that total confidentiality cannot be guaranteed by the researcher due to breaches that may occur from the members of the focus groups themselves.

During the entire research process the rights, interests, and well-being of the participants were respected.

1.8 Organisation of the Dissertation/ Division of Chapters

This research study is organised as follows:

Chapter One provided an orientation of the proposed study. This included the introduction and background to the study, purpose of the study, research problem and research question, aim of the research, an outline of the conceptual framework and the research approach for the study, and the organisation of the study.

Chapter Two is a comprehensive review of the literature that includes establishing a conceptual framework for the study of digital leadership.

Chapter Three describes the research paradigm, research approach, research site, and participant selection, data generation, and data analysis method used in this study. A qualitative design was used.

Chapter Four provides an analysis and interpretation of the qualitative data collected during the focus interviews, document analysis, and individual interviews.

Chapter Five provides a synopsis of my research journey and describes my learning from my research journey which answers my research question and also includes recommendations for further research.

1.9 Chapter Summary

Chapter One aimed to capture the reader's interest and as such provided insight into the background and rationale for exploring the perceptions of teachers about the digital leadership practices of their principals in leading digital age learning at their schools. This chapter also discussed the conceptual framework, the significance of my study, the problem statement, the aim and objectives of my research question and the research approach, concluding with a summary of all the chapters.

CHAPTER TWO

LITERATURE SURVEY

> "We live in a time when all leadership rules are being rewritten, a time that is fast becoming recognised as being as historically momentous as that of the mid-15th century. Digital technologies have moved from a life enhancing phenomenon, but one that was essentially turning our physical world into a virtual one, to being genuinely disruptive, turning our lives upside down and rendering irrelevant many tenets of our understanding of the world in which we live".
>
> Rick Haythornthwaite, Chairman of Centrica and MasterCard (Bolden & O'Regan, 2016, p. 6)

The age of digital transformation in education, ushered in by the fourth industrial revolution, has resulted in complex school challenges and thus the pressures on school principals are immense. In such circumstances, principals will need to expand their activities beyond incorporating new digitals in classrooms to realise their potential in leading digital age learning (Domeny, 2017). In this chapter, I proceed with the literature survey which reviews related literature on the research topic in order to build on prior knowledge and inform the primary research (Onwuegbuzie & Frels, 2016), as well as place this study into perspective and provide direction. This literature survey sought to inform the main research question in this study: What are teachers' perceptions of Gauteng primary school principals' digital leadership practices for leading digital age learning in their schools?

However, the literature surveyed for this chapter revealed only a handful of studies that mention digital leadership and none that have specifically addressed the qualities, attributes, beliefs, and approaches related to digital leadership. Furthermore, much of the literature accessed has an international focus as there is a lack of South African literature – to date, little research has been done on the digital practices of school leaders in South African schools. This study sought to address some of the gaps in the literature by discovering and examining digital leadership through qualitative data using focus group interviews, document analysis, and individual interviews.

The content and organisation of this literature review includes the conceptual framework; the evolving digital age learning environment (defining and exploring digital age learning

environments, connected learning, digital tools and platforms, digital skills, and personal learning networks); the argument on current leadership models being unable to effectively respond to the pace and unpredictability of digital age learning creating a fundamental need for a paradigm shift in school leadership; an examination of leadership in the digital age; the nature of digital leadership (background, definitions, practices); the link between digital leadership and the *Batho Pele* principles and the guidance of the international and national standards for digital leadership; challenges of digital leadership; enabling conditions and opportunities that support digital leadership; and a chapter summary.

2.2 Conceptual Framework

This study was positioned in a conceptual framework that views leadership as practices and activities that augment digital age learning. This study was underpinned by two theories. The first framework was grounded in transformational leadership theory, focusing on the four core leadership practices (Leithwood et al., 2008), while the second framework was based on connectivism, a learning theory for the digital age (Siemens, 2005).

2.2.1 Leithwood's four core leadership practices

The first conceptual framework draws from the research of Leithwood et al. (2008) who identified the importance of four core leadership practices that are valuable in any educational setting. The four core leadership practices are essential for successful leadership (Leithwood et al., 2008; Romain, 2018) and according to Leithwood et al. (2008) and Leithwood and Seashore Louis (2012), are continuously refined and improved upon. Their dynamic nature is well suited to leading digital age learning. This reasoning stems from the business sector that perceives leadership to be organic in the digital age with ever changing practices and activities (Bacon & Möller, 2016; McGonagill & Doerffer, 2011). The four core leadership practices identified by Leithwood et al. (2008) are depicted in the diagram that follows (Figure 2.1).

Figure 2.1: Leadership practices: the four core leadership practices (Leithwood et al., 2008)

Over the years, researchers have explored the ever-changing nature of the four core leadership practices in digital educational settings (e.g. Dexter, 2008; Håkansson Lindqvist & Pettersson, 2019; Petersen, 2014). They concluded that the four core leadership practices, which are elaborated on in the following paragraphs, can provide an influential source of guidance for principals as well as a basis for emerging leadership development in digital educational contexts (Håkansson Lindqvist & Pettersson, 2018; 2019).

2.2.1.1 Building vision and setting direction

Leithwood and Seashore Louis (2012) described *building vision and setting direction* as specific leadership practices of building a shared vision; fostering the acceptance of group goals; creating high performance expectations; and communicating the direction in schools. In response to changing times, Dexter (2008) and Petersen (2014) defined *building vision and setting direction* as visions, goals, and the purpose of digitals, while Håkansson Lindqvist and Pettersson (2018; 2019) found that principals' practice of *building vision and setting direction* in digital learning contexts entails preparing students for the information age through digital tools, online platforms, and social media (Couros, 2015); school development; more efficient school organisation through digital tools for pedagogical purposes; and leading digitalisation. Undertaking such digital initiatives would require employing a shared vision (ISTE, 2018) that is created in schools. This entails guided conversations about stakeholders' aspirations and

dreams for their schools' future through the use of collaborative approaches to foster authentic, active commitment and positive ownership instead of resigned compliance (Gabriel & Farmer, 2009; Mulford, 2003) in digitising the school.

2.2.1.2 Understanding and developing people

Understanding and developing people is defined as a principal's customised support and consideration; intellectual stimulation; modelling of appropriate values; and practices between people and groups (Leithwood & Seashore Louis, 2012). In the digital age, principals link the concept of *understanding and developing people* with professional development (Dexter, 2008; Peterson, 2014). Similarly, Håkansson Lindqvist and Pettersson (2018; 2019) found that principals' practice of *understanding and developing people* involved leading for digitalisation; a deep knowledge and professional development in digitalisation; personal knowledge in digital competence; good digitalisation conditions for teachers; basic digital skills; appropriate professional development based on an individual's existing knowledge; and using digitalisation to its full potential.

2.2.1.3 Redesigning the organisation

Leithwood and Seashore Louis (2012) referred to *redesigning the organisation* as a principals' ability to build collaborative cultures; restructure the organisation to support collaboration; nurture relationships with families and communities; and connect the school to the wider community. A shift towards a more digital world has expanded the principals' practice of *redesigning the organisation* to include hardware, software, and network resources (Dexter, 2008). On the other hand, Peterson (2014) stated that *redesigning the organisation* includes organising online activities for development to take place in digital spaces. Håkansson Lindqvist and Pettersson (2018; 2019) added to the description of *redesigning the organisation.* In their findings, the principals' practices of *redesigning the organisation* includes accessibility to new digitals; digital infrastructure; administration; forms of sharing; and the digital divide. Innovative and strategic thinking beyond the boundaries of conventional thinking (Couros, 2015) is crucial in the digital transformation of schools.

2.2.1.4 Managing the teaching and learning programme

Managing the teaching and learning programme refers to principals staffing the programme; providing instructional support; monitoring school activity; buffering staff from distractions to their work; and aligning resources (Leithwood & Seashore Louis, 2012). According to

Håkansson Lindqvist and Pettersson (2018; 2019), *managing the teaching and learning programme* in digital age contexts is central to supporting new forms of teaching and learning. Principals' practices in this category comprise of developing digital teaching and learning; providing conducive conditions which includes equipment and professional development; using digital tools to strengthen pedagogy; supporting development of teaching with higher levels of digitalisation such as communication, learning, study materials and multimedia; making teachers work more efficiently and flexibly; and supporting teachers' collaborative work which involves sharing information and learning through web tools and best practices (Håkansson Lindqvist & Pettersson (2018; 2019). *Managing the teaching and learning programme* also involves a move away from technical and shallow digital use to more deep and creative interactive pedagogy (Kirk & Pitches, 2013).

Based on the above discussion, it is reasonable to suggest that the four core leadership practices lend themselves to the understanding of school leadership in the digital age.

2.2.2 Connectivism learning theory

In addition to the four core leadership practices attributed to the research of Leithwood et al. (2008) and Leithwood and Seashore Louis (2012), the conceptual framework for this study was also informed by the work of Siemens (2005) and Downes (2012) in connectivism learning theory. According to these authors, knowledge creation is distributed across connected networks; thus, learning occurs as individuals navigate social networks (Downes, 2012; Siemens, 2005). Connectivism thus posits that learning is connected. The focus of the research presented is the link between connectivism and principals' practices in leading digital age learning. As such, connectivism informed the investigation of this study and is regarded as a fifth dimension used to supplement Leithwood's four dimensions.

Siemens (2005, p. 4) described learning in connectivism as:

- "Learning and knowledge rests in diverse opinions.
- Learning is a process of connecting specialised nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas and concepts is a core skill.
- Accurate and up-to-date knowledge is the aim of connected learning activities.

- Decision-making is a learning process in a shifting reality."

Connectivism theorists such as Siemens (2005), Downes (2012), and Kelly (2018) postulated that connected learning needs connected leadership. Kelly (2018, p. 10) stated that a leader's "key skill is to connect people with ideas, resources and contacts, to discover displaced information and data and to be a prominent online influencer who is sought out by others. The leader focusses on the flow of information within the organisation and is committed to open innovation and open sourcing". These connections according to Siemens (2005) have leadership implications of:

- marshalling resources to achieve outcomes;
- realising that complete knowledge cannot exist in one person;
- diverse teams with different thoughts are critical for exploring ideas;
- innovation is a challenge;
- media, news, information are being challenged by open, real-time, two-way information flow of blogging;
- personal knowledge management in relation to organisational knowledge management;
- designing learning environments.

Although connectivism is a new learning theory, the existing literature on connectivism provides an interesting perspective in that it allows for a dynamic and organic approach to leadership (Makina, 2016; Natt och Dag, 2017). Principals can learn through self-created learning networks and constant access to digital sources of knowledge and information (Nussbaum-Beach, 2012; Siemens, 2005) to become digital innovators who thrive on empathy, problem finding and solving, risk taking, networking, observing, creativity, resilience, and reflection and strategy (Couros, 2015). For leadership, such a bearing needs leaders who think differently. An innovator's mindset (Couros, 2015) offers a perspective that digital connections and innovation can be viewed as an innovative and strategic way of thinking (Couros, 2015) that encourages a more human centred approach to innovation and digital age learning (Downes, 2012; Siemens, 2005). Connectivism learning theory as developed by Siemens (2005) shows the importance of connected learning in digital age learning.

Hesse (2018) acknowledged that a single theory may be insufficient to support digital leadership. He contended that more than one theory might be needed to complement each other for effective leadership in digital age learning (Hesse, 2018). Connectivism complements the

four core leadership practices in that it can enable principals to develop their competence by forming connections through digital activities (Siemens, 2005). A central tenet of connectivism is that learning occurs outside of people and is controlled by digitals (Siemens, 2005). Based on this premise it can be argued that principals' practices of *setting direction* require connections and digitals to learn and prepare for digital age learning (Håkansson Lindqvist & Pettersson, 2018) by mastering new forms of deep digital pedagogy themselves to improve teachers' instruction (Fullan, Hill, & Rincón-Gallardo, 2017; Superville, 2019).Connectivism can also support principals' practices of *developing people* by supporting personal and professional growth through connections (Håkansson Lindqvist & Pettersson, 2019) in online PLNs. Furthermore, the principals' practices of *redesigning the organisation* includes digital activities (Peterson, 2014) aimed at accessing new digitals (Håkansson Lindqvist, & Pettersson, 2019) through connections (Siemens, 2005). These digital activities are centred around thinking innovatively and strategically with a "all hands on deck" strategy (Couros, 2013) where all stakeholders have to support principals' digital leadership by being collectively responsible for the provision of digitals (Zhong, 2017). Moreover, collaborative work and collegial learning using digital tools (Håkansson Lindqvist & Pettersson, 2019) are traits of connectivism that are akin to principals' practices of *developing teaching and learning*. Therefore, it can be assumed that the theory of connectivism complements the four core leadership practices as activities that collectively support digital leadership in schools.

The four core leadership practices and the theory of connectivism, together with teachers' opinions of principals' leadership practices and principals' perspectives of their own leadership practices were considered, integrated, and synthesised to examine principals' digital leadership practices.

Having outlined the conceptual framework, the evolving digital age learning environment will now be reviewed.

2.3 The Evolving Digital Age Learning Environment

2.3.1 Defining and exploring digital age learning environments

Greater internet access and increased digital use are driving evolving digital age learning environments. This has disrupted and transformed the way we live, learn, work and play (Bates, 2015; Schwab, 2017; Sheninger, 2014) in technology-rich environments.

Supporting research in Figure 2.2 below illustrates internet and social network usage in South Africa. We are Social (2018) indicated that 30.81 million users actively access the internet in South Africa and there are 18 million active social media users. Of the 38 million mobile users, 16 million are active mobile social users. These statistics are indicative of the growing number of people in South Africa connecting in online spaces.

Figure 2.2: South Africa's digital snapshot as of January 2018 (We Are Social, 2018)

Improved access to the internet and growing digital usage indicates that more people have access to digitals and are active digital users. Greater digital engagement has redefined the patterns and behaviours of peoples' everyday lives in terms of how they communicate, collaborate, and learn (WEF, 2016). Education is becoming part of this evolving digital landscape as digital users are using these platforms not only to socialise but also as information, knowledge, and learning tools (Bates, 2015; Ngesi et al., 2018; Sheninger, 2014). Digitals have already begun to transform the South African learning environment (Motshekga, 2019) and the South African president emphatically indicated that the current education system will undergo a radical overhaul to adapt to the fourth industrial revolution (Ramaphosa, 2019).

Digital age learning environments are described by Wheeler (2012) as any set of technology-based methods that support learning. In the international context, digitals support learning in

schools through enhanced platforms, online assessments, effective lesson planning, and by providing learners with access to information and resources that support individualised and collaborative learning beyond the classroom (McKnight et al., 2016). Digital age learning environments, in most developed nations, focus on supportive spaces for learning inside and outside the school where students can collaborate on their devices; connect and access the internet; interpret and make meaning of social and cultural influences; communicate attitudes and perceptions towards digitals; receive online teaching content and training; on-site technical support; and digital tools (Crompton, 2015). Further to this, digital age learning environments include platforms for deep digital pedagogy whereby students create and participate in each other's web quests. This is an inquiry-based activity where students are given access to on-line resources to complete a task (Eady & Lockyer, 2013) including digital mash-ups where students engage in media activities that use various digital forms (Lodge, Kennedy, & Lockyer, 2020). Digital age learning environments also focus on instant feedback and digital educational tools that involve principals, teachers, students, and parents (Mallik & Mallik, 2017; Sheninger, 2014).

In South Africa, digital age learning environments are largely shaped by education policies, frameworks, and infrastructure (Kilfoil, 2015; Meyer & Gent, 2016; Venter, Craffert, van Greunen, Veldsman, Candi, & Tor Sigurdarson, n.d.). The National Development Plan with its ambitious aims towards schooling 2030, South Africa's broadband policy and the *Professional Development Framework for Digital Learning*, amongst others, have attempted to transform the learning environment by increasing access and use of digitals in schools (Mashile, 2016; SA DoBE, 2015; 2017b; SA DoC, 2013). The implementation of these policies aimed at transforming the learning environment has, however, been erratic, differentiated, slow, and fragmented with limited capacity to significantly impact the learning environment (Mashile, 2016, Meyer & Gent, 2016; Mlambo et al., 2020; Padayachee, 2017).

While global digital age learning environments concentrate on personalised, connected, and collaborative online learning spaces beyond the school (Schwab, 2017; Sheninger, 2014), the South African focus has been on the provision of digital tools, use of digitals inside the classroom, and infrastructure development rather than a pedagogic shift away from traditional learning environments through digitals (SA DoE, 2004; Kilfoil, 2015; Mashile, 2016; van der Elst, 2016). Some of the key contributors thought to hamper the advancement of digital age learning environments in South Africa are systemic contextual problems inherited from past

educational policies coupled with a lack of specific transformative pedagogical guidelines in current policies (Kilfoil, 2015), lack of large scale connectivity in schools, funding, and the digital divide (Frost & Sullivan, 2017; Mabaso 2017) as well as a lack of basic digital skills amongst teachers and unequal distribution of resources (Mashile, 2016). Further to this, numerous digital initiatives by the government targeted at changing the learning environment, though commendable, remain limited in the scale of adoption across the country as it is currently concentrated in a few schools and in select provinces (Frost & Sullivan, 2017; Mashile, 2016, Meyer & Gent, 2016; Padayachee, 2017). Even with the introduction of digitals in South African schools, learning environments continue to operate as traditional industrial age learning environments (Frost & Sullivan, 2017; van der Elst, 2016).

A more intriguing perspective on South Africa's digital age learning environments is offered by Kilfoil (2015) who pointed out that emerging technologies have the potential to extend collaborative and connected learning, similar to international trends, across boundaries and barriers in South Africa. His perspective raises questions about the lack and lag of transformative learning outcomes in the use of digitals in the South African education sector. Kilfoil (2015) also contended that in the absence of specific pedagogical guidelines, learning environments in South Africa remain focused on technical aspects and superficial levels of didactic digital use.

As South Africa re-envisions its education sector to align with global digital learning trends, digital age learning environments across the world are reinventing traditional school environments by defying out-dated constructs of learning in schools (WEF, 2016). A theoretical paper by Kivunja (2014) advocated that digitals influence how students learn. In his paper, Kivunja reviewed various authors' perspectives on how today's students learn and he concluded that students in the digital age "do not learn by being told what to do and memorizing the procedures needed to accomplish a task" instead students "learn by finding meaning in the information they access and seeing its significance in the big picture of their real lives" (2014, p. 106). This style of digital learning depends on digital technologies (Dobrovolny, et al., 2015; Sheninger, 2014).

Consequently, this shift in how students learn in the digital age requires school leadership that is "able to reshape traditional schools' often strongly held beliefs about students, curriculum, assessment and teaching and learning" (Amos et al., 2014 cited in Kemp, 2015, p. 90) and thus

foresee these changing learning styles in learning environments. Connected learning is a major part of these changing dynamics in digital age learning environments.

2.3.2 Connected learning

Siemens (2005) and Downes (2012) described connected learning as educational opportunities for the digital age as it draws on digital capabilities to access diverse learning pathways. Ito et al. (2013) documented the capacity of connected learning to nurture networking and collaboration through connections in digital age learning environments. Connected learning supports digital age learning because it is a move away from fixed, hierarchical structures towards personalised learning that takes place "across" rather than "up or down" (Lindsay, 2014; Schravemade, 2015; Thomas & Seely-Brown, 2011).

One of the key principles of connected learning is that the learning process is connected (Ito et al., 2013). Principals are the synapses between all learning connections and collaborations in learning environments (Kelly, 2018). According to a study by Niekerk and Blignaut (2014) cited in Domeny (2017) many scholars argue that the assimilation of digitals will only succeed if principals drive the change process. On the basis of this conclusion, it can be argued that it is the responsibility of principals to invest in increasing teacher and learner capacity to escalate digital connections (Lindsay, 2014; Sheninger, 2014).

Connected learning is also supported in South Africa by the DBE. The department has recognised the need for learning to move towards a flat, collegial system (Mweli, 2018) and has begun to put strategies in place through the *Professional Development Framework for Digital Learning* (SA DoBE, 2017b) which aims to develop educator competencies to facilitate digital age learning through digital tools, resources, and platforms. The goals articulated in this framework can be effectively achieved through digital opportunities in connected spaces through school leadership practices.

Principals are beginning to acknowledge and respond to the reality that learning environments are evolving with digitals (Sheninger, 2019). In developed nations, this reality is in line with the general consensus in the literature that indicates students' access to and use of digitals have shifted and amplified learning in schools to more connected, networked, and collaborative practices and spaces (Bates, 2015; Couros, 2015; Domeny, 2017; Garcia, 2014; Ito et al., 2013; McKnight et al., 2016; Prensky, 2005; Seely Brown, 2012; Sheninger, 2014). In South Africa, students are following similar trends of connected learning in schools. Padayachee (2017) cited

numerous studies where digital tools have been positively integrated in South African schools, connecting learning capabilities.

2.3.3 Digital tools and platforms

Digital tools and platforms are at the forefront of shaping evolving digital age learning environments through connected learning (Downes, 2012; Ito et al., 2013; Sheninger, 2014; Siemens, 2005). It is not within the scope of this study to survey the vast nature and impact of digital tools and platforms available, therefore I briefly describe a few popular digital tools, and platforms (see Appendix 10).

Digital tools and platforms are moulding digital age environments which perpetuate connected learning and greater collaboration. In order to facilitate the success of this way of learning, digital usage and connected learning has to be supported and principals' digital skills are vital to leading and providing this support.

2.3.4 Digital skills

According to the Organisation for Economic Co-operation and Development (2018, p. 2) students will have to be "groomed for jobs that have not yet been created, technologies that have not yet been invented and to solve problems that have not yet been anticipated". Principals need to develop and continually upgrade their skill sets (Grand-Clement, 2017) to lead unchartered territories of this nature prevalent in the digital age (Zhong, 2017).

The United Nations Educational, Scientific and Cultural Organization (UNESCO) (2018, p. 2) defined digital skills as "a wide range of skills, some of which are not strictly skills but relate more to behaviour, expertise, know-how and life skills". Principals' digital skills according to Zhong (2017) is their ability to model digitals, be a legal expert on digital usage, and provide professional development for teachers in all things digital. Bentley (2016) perceived principals' digital skill sets as the ability to respond to group emails; proficiency in data systems; web navigation skills; ability to use digital tools; evaluation skills for digital curricula; expertise in accessing and working with district, school and student data; developing engaging digital presentations; using live digital video communication tools; and use of digital collaboration tools and mobile devices.

Initiatives and platforms by the DBE that may provide opportunities for principals to develop digital skills included the provision of internet connectivity, initially to 600 out of an estimated 23 000 public schools in South Africa (SA DoBE, 2017a); provision of digital content in the DBE cloud; CAPS aligned app page with 111 free educational apps; access to digital textbooks and DBE and partners' broadcasting content for gateway subjects; as well as 67 and a half hours of revision lessons and 37 and a half hours of curriculum lesson notes (Surty, 2017). NGO initiatives in South Africa, aimed at developing principals' leadership and digital skills, include Partners for Possibility and Performance Solutions Africa (Sullivan & Associates, 2016).

The initiatives mentioned above are important, however, developing digital skills remains largely a personal effort for principals (Powers & Green, 2016). As such, principals' digital skills need to be given precedence in education because they need robust and relevant skills to lead in unchartered and evolving circumstances in the digital age (Sheninger, 2014; UNESCO, 2018).

It may be argued that the literature explored on connected learning in the preceding paragraphs revealed that principals establish and steer interconnected learning. Research has indicated that the job of the principal is to create conditions in schools to effect learning (The Wallace Foundation Report, 2013) by improving their own skills and knowledge that is relevant to digital age learning environments. Consequently, a principal has to become a connected, digital "leader of learning" (The Wallace Foundation Report, 2013, p. 6) because connected learning needs connected leadership (Downes, 2012; Kelly, 2018; Siemens, 2005).

Personal learning networks (PLNs) are chartering a way for principals to become connected learners and take ownership of their professional development in connected learning spaces.

2.3.5 Personal Learning Networks

PLNs are defined as offline and online connections to both people and resources who augment our learning (Richardson & Mancabelli, 2011). In the digital age, PLNs are essentially relationships, engagement, and new knowledge (Sheninger, 2016). These relationships include principals' local and global connections with peers through Google, Twitter, Facebook, and LinkedIn amongst other social media channels. Professional collaboration, advice, best

practices (Meador, 2018) as well as tracking conferences and events, ground-breaking ideas, and on the go learning (Sheninger, 2016) are characteristic of these platforms.

Leadership is second only to classroom instruction for learning and since improving leadership is integral to transformation (Leithwood et al., 2004), it is imperative that principals *invest in* their own professional learning (Richardson, 2011; The Wallace Foundation Report, 2013) through PLNs to develop and strengthen their practices in digital age learning environments. The value of PLNs in leadership studies was supported in the findings of a qualitative study by Trust et al. (2018) based on the perceptions of 400 leaders in the education sector. The results of this study showed that PLNs supported their growth as leaders and that their PLN activities positively impacted their learning and practices in various ways. PLNs are the adhesive that can support the bond between connected leadership and connected learning in the digital age.

In the South African context, principals' professional learning communities (PLCs) are similar to PLNs (SA DBE, 2017). PLCs like PLNs enable principals to grow through collaborative networking, and optimum value is gained when participation is voluntary and participants willingly use their private time for their own professional development (Cereseto, 2015). In South Africa, principals' PLC forums are compliance driven, mandated by the DBE to improve competency and principals are required to comply with PLC directives (SA DBE, 2017). Principals' PLCs are also officially linked to the South African Council of Educators which provides a platform for them to track their own learning by biannually logging their continuous professional development points. The points are intended to reflect the type of development programmes principals have engaged in (SA DBE, 2017). Further to this, The South African Principal's Association (SAPA), affiliated to the International Confederation of Principals, provides support materially, collegial interaction, and leadership workshops and is considered to be part of a principal's PLC (SA DBE, 2017). Scholars continue to highlight how departmental standardisation and accountability measures have turned PLCs into "contrived collegiality" which is about achieving government policy mandates instead of learning communities that review and renew professional values (Hargreaves & Shirley, 2009 cited in Taylor 2017, p. 17). Despite the bureaucratic nature of principals' PLCs in South Africa, initiating networking and collaboration is valuable for South African principals as many work in isolation in their own schools (Naicker & Mestry, 2015). Given the lack of collaborative structures for principals to engage in collective capacity building as pointed out by Naicker and Mestry (2015), the DBE's PLC forums for principals can be perceived as an early attempt to

address these gaps. However, principals in South Africa, like their overseas counterparts, can tailor their professional development beyond rigid PLC activities as rationalised by Mestry (2017) who stated that principals should not be completely dependent on the DBE for professional development. Furthermore, Sheninger (2014) and Couros (2015) noted that principals can use digital tools such as their smartphones, available apps, and the web to set up their own personal PLN.

Recently, the GDE in partnership with Vodacom, gave smartphones to 2 200 Gauteng principals (Mzekandaba, 2019). This initiative was limited to Gauteng and the purpose of the smartphones was for principals to report urgent matters, receive common messages, receive updates in real-time, get prompt assistance, and share information on best practices (Mzekandaba, 2019). The sharing of best practices using smartphones and other digital devices as advocated by Sheninger (2014) and Couros (2015) is a step towards South African principals building a PLN.

The current literature is minimally focused on the construct of a principal's digital PLN. In contributing to the literature, I designed an infographic of a connected principal's digital PLN for South African principals in line with the context of this study.

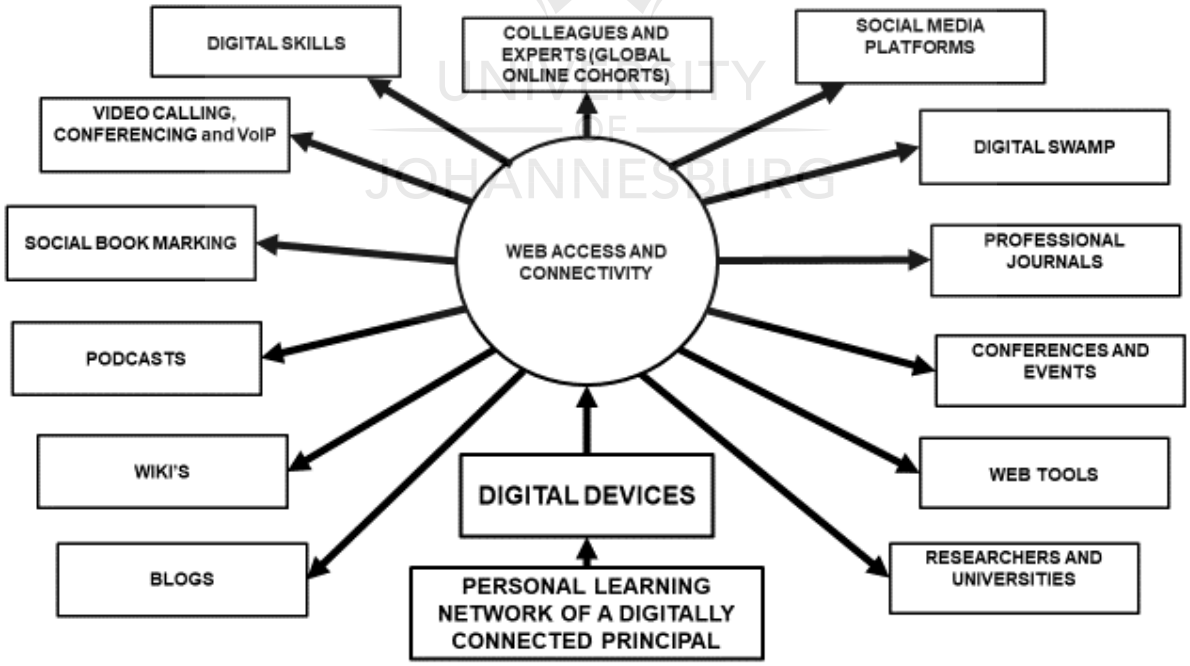

Figure 2.3: Personal Learning Network of a digitally connected principal (author's own)

Figure 2.3 above illustrates the vast reach of a PLN that South African principals could engage in to become connected digital leaders in digital learning environments such as through the use of digital devices, web access, and connectivity to support their growth. The digital activities within a PLN that can, in my view, nurture connected leadership include:

- Blogging to communicate, reflect, share opinions, discuss various topics, discover best practices, and get ideas on innovation and professional experiences to integrate into professional practice (Sandifer, 2013; Sheninger, 2014). Engebritson (2011) found that principals blog to communicate and share ideas and that they recognise the efficiency of blogging as a communication tool as soon as they start blogging. In South Africa, the government has outlined guidelines for use of any type of social media such as blogs, podcasts, social networks, and wikis for all government employees which include principals of public schools (SA Government Communication and Information System, 2011). The literature, however, revealed no studies to date on South African principals' blogging for professional development.
- Using wikis (interlinked webpages, websites, and databases) for collaborative professional development (Sandifer, 2013). According to Miranda, Isaias, and Costa (2014), wikis are a global platform "for principals to add to a free repository of collective knowledge and to communicate their educational beliefs and philosophies" (Harris, 2015, p. 22). Based on the above statement, it can therefore be assumed that wikis may be a valuable learning platform for South African principals.
- Listening to podcasts to access innovative ideas and content in education for professional development (David-Lang, 2016). In addition, Tshelane (2015) stated that principal's use of podcasts stimulates learning. Padayachee (2017) pointed out that podcasting is limited in South African schools, however, non-profit organisations such as BRIDGE and teacher unions such as NAPTOSA have begun to host podcasts for South African school principals to share insights and best practices on leadership for personal development ("Leadership in education radio show," 2016, para. 1).
- Social bookmarking to store, organise, curate, and share bookmarks online to organise resources (Sheninger, 2014). Social bookmarking sites are knowledge sharing communities that can be used for professional development for any group of users (Ruffini, 2011) including principals around the world and in South Africa.

- Connecting and collaborating with others in real-time by making video calls, conference calls, group video calls, and voice over IP (VoIP), which is the transmission of voice and multimedia content over Internet Protocol networks (Webex Team, 2019). Principals can use video calling, conferencing, and VoIP as a collaborative learning tool for greater growth in their learning. As such, the use of video conferencing as a principal's professional learning activity needs to be explored more in the literature both abroad and locally.
- Continuously upgrading personal digital skills (Grand-Clement, 2017) to lead digitally rich learning environments (Sheninger, 2014). Principals improve and advance their digital skills through free and low cost online learning platforms (Bradford, 2018).
- Forging professional relationships with colleagues and experts in the field to access knowledge and opportunities in global online cohorts like LinkedIn (Rubin, 2018). Harris (2015, p. 22) stated that "principals use LinkedIn and other platforms to identify possible community resources and specialists in the field". Based on this statement, these platforms could be an important learning activity for South African principals.
- Creating professional profiles on social media platforms such as WhatsApp, Twitter, Instagram, and Facebook to share, mentor, and grow through digital relationships to ultimately impact pedagogy (Gray, 2019). In the international research, Cox and Mcleod (2014) found in their qualitative study of 12 principals that social media had a significant impact on school principal's personal and professional growth. In South Africa, a mixed methods study by Mohabier (2016) revealed that school principals and other stakeholders approved the use of social networking learning tools and were willing to apply social networking to perform their daily tasks due to the potential of these tools. Schools in South Africa need to incorporate social networking to improve learning as pointed out by Mohabier (2016).
- Navigating the digital swamp (expanding digital innovations) in education to evaluate digital resources to be used for teaching and learning is an important part of a principal's PLN, as these activities build their expertise in sourcing suitable digitals to positively affect pedagogy (Fullan & Donnelly, 2015).
- Reading professional journals to build knowledge on educational research. Most professional journals are online and on free search engines and digital academic platforms. These downloadable articles have digital pathways for readers to connect

with authors to initiate dialogues and add to their professional network of influential individuals (Young, 2008).

- Participating, attending, and tracking conferences and events in the field to increase professional development. Principals learn about the latest evidence-based approaches, network, and forge connections with other leaders at conferences and events (Sheninger, 2014).
- Using web tools to engage with content in rich, interactive, real-time virtual environments for personalised learning in virtual spaces (Chisega-Negrilă, 2013; Hall & Russac, 2014, Sheninger, 2014). Principals can leverage the potential of web tools to organise and filter vast amounts of data and information throughout the web to obtain knowledge they require (Miranda et al., 2014).
- Partnering with researchers and university faculties. As part of professional learning, principals may get opportunities to pilot or experiment with innovative teaching and learning digitals that researchers are continuously developing (Scott-Curwood, 2019).

Principals who participate in PLNs demonstrate 'adaptive expertise' which is particularly important in unpredictable conditions (Timperley, 2010). Adaptive expertise skills can enable principals in disruptive digital age learning environments to solve unfamiliar problems, balance efficiency and innovation, take calculated risks, and constantly build knowledge and skills (Ellis & Boyd, 2015). Based on this premise, it may be assumed that PLNs are vital for South African principals to "build internal capacity" and adaptive skills (Timperley, 2010) to meet contemporary leadership expectations (Greaves et al., 2012).

2.4 Current Leadership Models

Richardson et al. (2013, p. 145) stated that "digital technology continues to put pressure on the education system to change, to adapt, to improve, to streamline, to become more effective, and to become more efficient". The principal is at the core of this shift (Richardson et al., 2013).

Interestingly, a theoretical review of nine contemporary leadership models by Bush and Glover (2014) suggested that most modern models although valuable, are partial, in that the focus of each model is on one particular aspect of leadership. These aspects include characteristics and personalities of leaders, organisational leadership, and context-based adaptive practices which modern scholars have comprehensively focused on in leadership studies (Bush & Glover, 2014; Khan & Nawaz, 2016a;b). The dominance of specific traits and foci in the leadership literature

entrenches the assumption that most contemporary leadership models provide an incomplete narrative of school leadership (Bush & Glover, 2014). This could be problematic in digital education that expects leadership to be responsive to transformation across all domains of the school in order to thrive in VUCA digital environments.

Drawing from business but equally relevant to leadership in the digital age, Bacon and Möller (2016) described VUCA as volatility which is a ruthless change in speed, volume, and scale; uncertainty that disrupts predictability; complexity which involves multiple interactions and is devoid of the cause-and-effect chain; and ambiguity which is a lack of clarity in understanding and interpreting ambiguous situations.

In conventional, predictable learning environments, contemporary leadership models have achieved the aims of the industrial age (Sheninger, 2014). However, research has shown that evolving digital learning patterns and environments are disruptive, thus making new demands on principals (e.g. Blackboard, 2018; Kemp, 2015; Mishra et. al, 2016; Sheninger, 2014). Kemp (2015) highlighted why current leadership is not sufficient for digital age learning and contended that principals need to engage in unconventional, ground-breaking practices to support students' changing needs in digital age learning.

A leading report based on research from Project Tomorrow on the new class of principal emerging in the digital age, affirmed that leadership has to evolve with the evolving practices of principals to facilitate successful digital age learning (Blackboard, 2018). This notion is extremely important as distinguished scholars have established that the leadership of the principal is connected to school effectiveness (Hallinger & Heck, 1998). Today's learners are digital, therefore, they need to be led by innovative, strategic, and optimistic digital leaders (Couros, 2015) who can adapt to complex, dynamic digital environments that entail a significant break with past and current practices (Greaves et al., 2012). This deliberation on current leadership models being inadequate for the digital age learning is consistent with Mishra et al. (2016, p. 251) who declared that "long-established theories of leadership may be necessary, but not sufficient, for successful leadership in ICT-mediated environments".

To cement this argument I refer to academics who pointed to the influence of the Alpha generation as being a decisive game-changer in the future (Driscoll, 2016; Nellis, 2017; Schwabel, 2014). According to McCrindle (2015), the Alpha generation are students going through the schooling system from the year 2015. Significantly, more than 2.5 million Alphas

are born every week and by the year 2025 there will be nearly two billion of them (Nellis, 2017; Schwabel, 2014). Although research on the Alpha generation is still in its infancy, early prognosis by some researchers such as dos Reis (2018), Driscoll (2016) and Schwabel (2014) indicated that these children are extremely comfortable with digitals having been born into it: "they have never lived in a world without smartphones, drones, tablet computing, apps, and 3D television" (Driscoll, 2016, p. 1). The generational researcher Mark McCrindle, who coined the term Generation Alpha, asserted that they will be the most technologically savvy, most globally connected, and most influential generation thus far (McCrindle, 2018). The biggest trend among the Alpha's will be their incessant use of digitals for all facets of life (Schwabel, 2014). This extraordinary embedding of digitals will ensure that the Alpha generation has unlimited access to information coupled with a natural ability to teach themselves and tackle big challenges using digitals (Driscoll, 2016). Principals will be tasked to lead the Alphas by preparing them for unanticipated, forthcoming learning conditions (dos Reis, 2018; Nellis, 2017). This will require a new kind of leadership in education for a new breed of digitally sophisticated learners (Driscoll, 2016). Principals will need to be revolutionary with a distinct departure from the way schools are currently led. Leadership in the digital age will need to go beyond being "just a leadership challenge (what good leadership looks like) to a development challenge (the process of how to grow bigger minds)" Petrie (2014, pp. 10-11).

In analysing other contemporary leadership styles in the face of digital age learning, Bush and Glover (2014, p. 5) somewhat supported instructional leadership as "leadership for learning" in the 21st century (Hallinger & Heck, 2010 cited in Bush & Glover, 2014). However, Bush and Glover (2014) fiercely criticised the neglect of attention of instructional leadership on the 'how' aspect of leadership which is seen as imperative for digital age leadership stating that instructional leadership is still predominantly focused on the effect of leaders on student learning.

Like instructional leadership, transformational leadership also focuses on leadership that seeks to influence outcomes in schools (Bush & Glover, 2014). In a comparative examination of three school leadership models to improve education, Nedelcu (2013) established that principals who practiced transformational leadership were able to sway teachers' perceptions to inspire improvement. This can be achieved by persuading teachers to assimilate their leader's values. Such an ideology poses concerns about the validity of transformational leadership in digital school environments. Even though transformational leadership has become one of the preferred

leadership models, it is in this regard that it contradicts the rationality of digital age leadership that seeks to lead rather than persuade.

Lumby (2016, p. 2) offered sharp criticisms of distributed leadership in the 20th century despite its popularity in the literature when she concluded that there is no clear delineation of distributed leadership for leading thus "no credible way of promoting it as action or of assessing its impact". Bonneville (2017) further noted that while some research points to the advantages of distributed leadership, not all research supports its efficacy. She stated that the results of many empirical studies on distributed leadership show that it has weak connections to school improvement. Most significant though, was the focus on co-ordination and planning in distributed leadership (Bonneville, 2017) which is inconsequential in digital age leadership as these are management functions that are outdated in disruptive environments (Greaves et al., 2012; Sheninger, 2014).

Domeny (2017, p. 1) acknowledged that "there is a gap between the current school culture and leadership style and the digital culture and digital leadership style that needs to be addressed in order to support the next generation of learners". Sheninger (2014) suggested that the basic principles and practices of current leadership need to shift in order to address this leadership style gap for leading digital age learning. Leadership can take on a more fluid disposition of being an activity rather than a role (McGonagill & Doerffer, 2011) in a VUCA environment.

2.5 Leadership in the Digital Age

Leadership in the digital age is focused on a move away from "organization-centric" toward "network-centric" leadership and "learning and adapting" instead of "planning and controlling" (McGonagill & Doerffer, 2011, p. 10). This new disposition of leadership in the digital age is about the activities of principals to lead learning, digitals, collaboration, innovation, and lifelong learning in evolving environments (Brown, Czerniewicz, Mayisela, & Huang, 2016). Similarly, Sheninger (2014) stated that current leadership models will be insufficient for digital age learning if digital leadership activities are absent.

2.5.1 Shift towards leadership for digital age learning

Leadership ideas that are orientated towards digitals have emerged in the field of education over the past two decades (Jameson, 2013). Zhong (2016) alluded to a growing body of research on the inclusion of evolving digitals in school leadership which demonstrate a shift in

leadership towards digitally positioned activities (McGonagill & Doerffer, 2011). This move towards digital leadership is supported by Avolio, Sosik, Kahai, & Baker (2014) who argued that digitals continue to change the very constructs of leadership in education and continue to demand new leadership attributes which include, amongst others, building networks (Aksal, 2015); digital evangelism, agility, coaching, being a learning leader (Blackboard, 2018); innovation and adaptability (Couros, 2015); experimentation (Stevenson et al., 2016); risk taking (Domeny, 2017); second order change skills, data usage (Greaves et al., 2012) and "creativity, problem solving, critical thinking, technological proficiency, global awareness, media literacy, and communication and collaboration" (Sheninger, 2014, p. 36). In a bold statement, Aksal (2015) confirmed this shift in stating that digitals have transformed the status of leadership to that of digital leadership in the education sector.

2.5.2 Digital leadership

2.5.2.1 Background

Schools are moving towards more transformative digital age learning. Principals are tasked to lead this digital shift through digitals to ensure that present and future learning spaces capacitate learners to become strong digital citizens (Kemp, 2015; Sheninger, 2014). This new role of the principal has been one of the key factors that has led to the emergence of digital leadership practices in schools (Sheninger, 2014). Digital leadership is research based. Although the literature in this field is still developing, recent studies by Aksal (2015) on headmasters as digital leaders in schools; Kemp (2015) on the expectations and reality of primary school principals' experiences of leadership in digital learning environments; Zhong (2016) on the effectiveness of digital leadership at K-12 schools; Domeny (2017) on the relationship between digital leadership and digital implementation in elementary schools; and Zhong (2017) on indicators of digital leadership in the context of K-12 education, pointed to the growing practice of digital leadership in schools. Further to this, papers by Brown (2014) and McGonagill and Doerffer (2011) affirmed the relevancy of digital leadership in schools. Moreover, in his book, Sheninger (2014) featured case studies of various school principal's digital leadership practices in the field today which indicates that digital leadership in schools is becoming the new norm. In addition, a comprehensive report on school principal's leadership practices by Blackboard (2018) revealed that digital leadership is now demanded by education departments.

2.5.2.2 Defining digital leadership

Key constructs of digital leadership have been deliberated on in literature. Brown (2014, p. 1) stated that digital leadership is essentially about the perceptions of individuals, that is, "the teachers, administrators, and technology leaders who embrace and realize the potential of technology to enhance student experiences at all levels". Sheninger (2014, pp. xxi, xix) defined digital leadership as "establishing direction, influencing others, and initiating sustainable change through the access of information, and establishing relationships in order to anticipate changes pivotal to school success in the future. It requires a dynamic combination of mind set, behaviours, and skills that are employed to change and/or enhance school culture through the assistance of technology". Domeny (2017) noted that digital leadership is a new construction of leadership that connects leaders with digitals and agreed with Askal (2015) in maintaining that digital leadership extends beyond the use of digitals to include perceptions of school culture that revolves around interactions and accomplishments. Couros (2013) thought of digital leadership as using the vast reach of digitals with an emphasis on social media to develop people, whereas Zhong (2016) defined digital leadership in her study as using digital resources to promote learning, teaching, and administration.

Further to this, some degree of ambiguity arises from the close similarity of digital leadership to other terms such as e-leadership, EdTech leadership, ICT leadership, technology leadership, virtual leadership, and online leadership which are sometimes used interchangeably with digital leadership (Brown et al., 2016). This could be attributed to similar leadership practices which establish leaders as being engaged in digitally positioned activities which is the basic premise of digital leadership (McGonagill & Doerffer, 2011; Sheninger, 2014).

Various scholars have theorised that principals' digital leadership practices are closely linked as they have similar ideologies but differing areas of emphasis, interlinking practices that share commonalities, and stand-alone practices that are unrelated.

Ahlquist (2014) characterised digital leadership practices as 10 competencies that include:

- mindfulness of evolving digitals.
- analysis of true and false digital content;
- awareness and reflection of digital profiles;
- instituting virtual borders;
- establishing professional and strategic online branding;

- constructing a PLN for collaboration;
- integrating digital technologies into leadership;
- cyber conflict resolution and mediation between stakeholders;
- digital decision-making strategies to promote citizenship; and
- using social media for good citizenship.

In her 2016 blog series on digital leadership in higher education, Ahlquist (2016) offered six digital leadership practices. Although these practices were conceived for higher education, they can also be considered for principals as the six practices are relevant in school settings. The six practices include:

- prioritising relationships and partnerships with students by interacting with them on social media and through feedback sessions;
- posting expertise within PLNs to become experienced and credible school leaders active in digital spaces, sharing original content, and providing feedback to stakeholders;
- practicing the newest school role of Chief Experiment Officer to adapt, embrace change, and be trendsetters as well as trend spotters;
- creating spaces and places for digital education and evaluation of digital tools for students including social media, other types of digital communication, and collaboration tools;
- strengthening 'heartware' to personalise digitals by infusing values, ethical decisions, student engagement, and innovation in digital usage; and
- digital role models and mentors including formal conversations with stakeholders and knowledge of how school leaders use digitals.

Demski (2012) on the other hand described digital leadership practices as being seven 'habits' which consist of:

- creating an atmosphere that inspires innovation through the use of digitals by permitting students to access mobile devices, ensuring ongoing professional development, conversing on best practices, and giving teachers some degree of autonomy;
- fostering collaboration through leading digital partnerships by motivating students to engage in collaborations using digital tools beyond the school and encouraging teachers to create personal professional learning networks outside of mandated platforms;

- being open to new ideas by meeting with groups that have common interests after school hours to learn more about integrating new digital tools and ideas;
- being a connected learner and committing to learning everything about how digitals contribute to student learning;
- locating and providing adequate resources by encouraging students to use social and networking education technologies;
- taking risks to build the digital capacity of teachers; and
- having a visionary focus that centres on student learning and creating an environment that empowers learning with digitals.

Sheninger (2014) conceived digital practices to be seven digital leadership pillars as depicted in the diagram below (Figure 2.4). The seven pillars of digital leadership are described in detail, as the pillars significantly contribute to the description of principals' digital leadership practices that focus on leading digital age learning in digital learning environments (Sheninger, 2014).

Figure 2.4: The seven pillars of digital leadership practices (Sheninger, 2014; 2017)

The first pillar, *student engagement and learning,* is described by Sheninger (2014) as promoting student's relevant, real-life learning experiences with digital tools and social media. According to his research, principals are the catalyst for promoting learning through the use of digitals beyond the school. As a result, the principal's focus shifts to improving vital skills of communication, collaboration, creativity, media literacy, global connectedness, critical thinking, and problem solving which are essential for successful digital age learning (Sheninger, 2014; 2019).

The second pillar, *learning spaces and environment*, is identified as principals initiating sustainable change by transforming learning spaces and environments that support skills aligned with the real world (Sheninger, 2014). A leader's purpose and strategy is thus directed towards leading digital age learning (Håkansson Lindqvist & Pettersson, 2019; Sheninger, 2014; Stevenson et al., 2016).

The third pillar, *professional learning and growth*, is described by Sheninger (2014) as principals who leverage social media to create their own PLN to actively learn in digital spaces (Ahlquist, 2016).

The fourth pillar, *communication,* is described by Sheninger (2017, p. 6) as principals providing "real-time, two-way communication via website and multiple social media tools" to support stakeholders' digital interactions in the learning environment. His research pointed to a principal's intuition to connect with all stakeholders (Håkansson Lindqvist & Pettersson, 2019; Zhong, 2017) in a reciprocal manner to create a culture of collaboration and innovation (Sheninger, 2014).

The fifth pillar, *public relations*, according to Sheninger (2014) refers to principals who use free social media tools to tell stories about their schools. Storytelling is a significant leadership practice for leading change and leaders share public narratives to communicate shared values (Ganz, 2010 cited in Aidman & Long, 2017).

The sixth pillar, *branding,* is defined by Sheninger (2014 as developing digital strategies to build a positive brand presence through continuous digital marketing. Sheninger and Rubin (2017) summarised branding as belonging and principals can create a strong brand that can be influential, effective, and can build trust with communities to work together to support learning. To create that trust, leaders invite others to have confidence in and identify with their brand through a common purpose (Sheninger & Rubin, 2017).

The seventh pillar, *opportunity*, according to Sheninger (2014) is a consistent quest to improve existing programmes, resources, and professional development and his research indicated that principals find ways to improve learning through digital connections.

The digital leadership practices discussed above are central to digital leadership and have been theorised to help school leaders navigate digital age learning.

Empirical studies have also examined other issues related to digital leadership. Thannimalai and Raman (2018) studied the level of digital constructs and leadership in Malaysian schools. One of their findings showed that there was a significant relationship between a principal's digital leadership and teacher's digital integration; this is in stark contrast to a study by Domeny (2017) who investigated the impact that a principal's digital leadership had on teachers' digital implementation in elementary schools and found that there was no significant correlation between them. However, Domeny (2017) maintained that as digital implementation increases in schools, principals will need to take cognisance of their role as digital leaders in supporting digital integration which is in keeping with the ideals of an innovator's mind-set for principals (Couros, 2013). An innovator's mind-set, however, is more than just being mindful of one's role as a digital leader; it is grounded on the principle that digitals are less about tools like computers, tablets, social media, and the internet, and more about how we use them (Couros, 2013).

Couros (2015) defined an innovator's mindset as an individual's belief that abilities, intelligence, and talents can be developed so that they lead to the creation of new and improved knowledge. Solomon (2017) described the innovator's mindset as the ability to be an innovator by discovering new ideas through creative and rigorous experimentation, while Gustafson (2014, p. 32) attributed "modeling risk-taking, embracing a culture of failing forward, and de-stigmatizing risk" to an innovator's mindset. This goes beyond just knowing you can achieve anything, to actually practicing what you know despite the risks (Couros, 2015). This way of thinking gives principals a powerful mental advantage to lead digital age learning with optimism, personal growth, support, guidance, ultimately translating ideas and knowledge into action (Couros, 2015) with a deep understanding of the digital learner (Solomon, 2017). When principals embrace their role as innovators, they recognise that they must always be thinking about the learner (Solomon, 2017) by establishing an innovative culture that nourishes the best learning experiences, while valuing the process of investigating and refining ideas (Couros, 2015; Stevenson et al., 2016). Such an approach opens up possibilities for leaders to create occasions for teachers to grow, develop a shared vision, align expectations, and ensure access to resources for innovative learning (Couros, 2013). Principals must also think about how innovation can bridge the gap between conventional and innovative thinking (McGonagill & Doerffer, 2011) to continuously meet the complex and dynamic needs of both the present learning environment and the evolving digital age learning environment. Such an approach opens up possibilities for principals to lead the creation of digital age learning environments

by crafting occasions for teachers to grow, developing a shared vision, aligning expectations and innovation as well as ensuring the provision of digital resources (Couros, 2013).

Aksal (2015) used the case study approach to investigate the symbolic views and digital roles of 60 headmasters in both primary and secondary schools in North Cyprus. This qualitative study revealed the headmasters' awareness of digital leadership and the implementation of communication and management of digitals in schools. The results showed that although headmasters had an awareness of both digital leadership and digital developments, there were no immediate implications for school culture and learning environments. However, in a mixed method study by Zhong (2016) on how digital leadership improved communication and collaboration, the findings of the qualitative phase of the study showed that the principals used a wide variety of digital platforms to communicate. Digitals significantly influenced their mode of communication, some of which included social media, online learning, digital teaching, personalised professional development, digital management, digital data collection and interpretation, digital citizenship promotion, and website filtering to support teachers' communication and collaboration as part of their digital leadership practices.

Digital leadership studies also explored digital learning environments. Zhong (2016, p. 138) maintained that "digital learning environments are critical for effective digital leadership". Digital learning environments include "digital resources, digital modelling and provision of hardware" (Zhong, 2017, p. 35) which are central to digital learning. Zhong (2016, p. 138) found that although the majority of principals were optimistic about digital integration "they ignored the need of digital learning environments and placed too much effort on professional development". This created irregularities in digital training programmes for teachers as their digital needs were not considered (Zhong, 2016). This finding coincided with conclusions in a study by Domeny (2017) which revealed that gaps in principals' digital knowledge and skills staggered the growth of digital learning environments in schools. As a result, principals need to prioritise building digital learning environments because digital learning will not occur if students do not have access to devices (Sheninger, 2014; Zhong, 2016; 2017).

Other studies examined the effects of digital leadership and revealed factors that could affect the implementation of digitals in schools. Uğur and Koç (2019) investigated how principals' leadership roles have changed in schools to support digital learners and digital culture. The findings of the study revealed that school leaders were fearful of social media use in the classroom and that professional development in digital skills was needed for principals to

promote digital learning environments. This finding was similar to a previous study by Papaioannou and Charalambous (2011) who established that while principals wanted to implement digitals they wanted more professional development to assist them in effectively implementing digitals. In addition, a study by Kemp (2015) on the expectations and realities of primary school principals' experiences of change leadership in the transition to digital age learning environments, revealed that the main expectations of principals in leading change was the need for professional development. Moreover, Håkansson Lindqvist and Pettersson (2019) pointed out in their study that skills for leading digitalisation is a necessary part of a school leader's professional development for leading others in the digitisation process. This is echoed by Sheninger (2014) who deemed that school leaders with skills, knowledge, and understanding of digitals will effectively lead digital age learning as digital leadership functions have expanded to include the practices of digital and other specialists in schools to spread digital proficiency throughout the school (Dexter, 2008).

2.5.2.3 Digital leadership and the Batho Pele principles

The Batho Pele (people first) principles of consultation, service standards, access, courtesy, information, openness, and transparency were first introduced in the DoE policies to transform the culture of public service delivery in South African education (Grobler, Bisschoff, & Beeka, 2012; Mbhele, 2015; Pietersen, 2014). As such, all employees in the DBE which include principals, are responsible for implementing the Batho Pele principles in the daily running of schools (Grobler et al., 2012; Pietersen, 2014).

All principals, who are public servants, are thus supposed to transform their archaic leadership practices and adopt new leadership practices (Grobler et al., 2012) that align with the real world such as the digital age. Principals can integrate the Batho Pele principles presumably into digital learning as an approach to put students first in digital age education. Principals need to embrace the tenets of Batho Pele as an integral part of all leadership activities to ensure that all practises are aimed at improving and delivering education (Grobler et al., 2012) in the digital age within South Africa.

The professional development framework for digital learning (SA DoBE, 2017b) and the NDP (SA DoE, 2013) like all South African policies align with the Batho Pele principles (Grobler et al., 2012; Mbhele, 2015; Pietersen, 2014) to support principals to meet students' digital age needs by giving them holistic *access* to digitals. As such, the provision of digital education

should integrate access to digitals, knowledge of how to use digitals, and sound pedagogic digital teaching and learning experiences. Principals can promote service excellence using both the principles of *consultation* and *setting service standards* through consultation with students and teachers on relevant resources and suitable standards. Providing *information* on any shortcomings in service provision to stakeholders will enable principals to ensure that the whole process of delivering education thus becomes *transparent, open,* and *courteous* (SA DoE, 2013; 2017; Pietersen, 2014).

The principles of Batho Pele support digital leadership practices in improving the quality and relevance of education in the South African context (SA DoE, 2013; 2017). Grobler et al. (2012) noted that the Batho Pele principles mandate service delivery to comply with international standards. If South African education is to line up with global standards, then service delivery of digital age education has to be strategically guided. Principals are the guides in learning environments to lead the delivery of education in the digital age using international and national professional standards for their principals' digital leadership practices.

2.5.2.4 Professional standards for principals' digital leadership practices

Grobler et al. (2012) affirmed that professional standards developed by recognised institutes in the field are widely accepted as best practices. The ISTE standards for school leaders are regarded by many scholars such as Akcil, Aksal, Mukhametzyanova, & Gazi (2017), Domeny (2017), Yieng and Daud (2017) and Zhong (2016) in the field as part of best practices that outline principals' responsibilities to evaluate skills and knowledge needed to support digital age learning.

According to ISTE (2018) these standards target the skills, knowledge, and behaviours required for principals to empower teachers and make student learning possible in the digital age, thus principals can use the five standards described below as a guideline to direct their digital leadership practices:

1. **Equity and citizenship advocate**: principals can use technology to increase equity, inclusion, and digital citizenship practices.

2. **Visionary planner**: principals can engage others in establishing a vision, strategic plan, and ongoing evaluation cycle for transforming learning with technology.

3. **Empowering leader**: principals can create a culture where teachers and learners are empowered to use technology in innovative ways to enrich teaching and learning.

4. **Systems designer**: principals can build teams and systems to implement, sustain, and continually improve the use of technology to support learning.

5. **Connected learner**: principals can model and promote continuous professional learning for themselves and others.

ISTE (2018) maintained that developing principals' competencies and mindset to leverage digitals to transforming learning, teaching, and leading in the digital age are the key aims of these international standards. Moreover, these standards help principals to focus their digital leadership towards a shared vision for transformation in their schools and provides a "road map" for principals across the globe to re-envision education (ISTE, 2018).

In the South African context, the *Policy on The Standards for South African Principals* introduced by the DBE provide a clear description of the principal's role in any South African school context (SA DoBE, 2016b). In terms of digital leadership, the principal has to, under these standards, lead the learning school. These standards outline how a principal must facilitate the curriculum. The actions of the principal related to leading digital teaching and learning in the school ensure that:

- data is collected for decision making in teaching and learning;
- professional learning networking takes place;
- digitals are used in deep learner centred education;
- classes are furnished with digitals such as smart boards, laptops for teachers, digital projectors, and smart tablets for learners for interactive learning through partnerships;
- the digital age pedagogy needs of learners are met;
- there is consistent connectivity and access to digitals for teachers and learners; and
- the school networks with neighbouring schools that have digitals.

These standards provide an entry point for South African principals to re-envision their role that is being redefined to include new responsibilities in line with the growing use of digitals in schools and the goals of digitals in education in the *National Development Plan* (National Planning Commission, 2012).

In Gauteng, which is the setting of this study, principals' digital leadership practices are driven by pillar six of the Member of the Executive Committee's (MEC's) *The Five Year 10 Pillar Education Programme* for education reform in Gauteng province (Lesufi, 2014). Pillar six focuses on digitals in education and requires school leaders to achieve this digital vision. The vision outlines building smart classrooms of the future, good connectivity in each classroom, creating information hubs, and provision of digital infrastructure and equipment to support schools (Lesufi, 2014) in implementing digital age learning.

Consequently, *The Five Year 10 Pillar Education Programme* has begun to transform the manner in which Gauteng schools are led. In advancing the digital vision, the DBE piloted the Data Driven Districts (DDD) programme in Gauteng in 2013 which has brought about significant digital transformations in Gauteng schools' administration, teaching, and learning (SA DoBE, 2014). Principals are at the frontline to lead this transformation through digital leadership practices.

2.6 Challenges of Digital Leadership

Despite the rapid development of digitals, numerous challenges, both internationally and in South Africa, hamper digital leadership.

The challenge of the digital divide is defined by Yuen (2015) as the gap between students who have and those who have not got access to digitals, the skills to use digitals to learn, and access to connectivity. He further stated that this gap exists amongst students of both developed and developing populations due to socio-economic factors (Yuen, 2015).

A significant challenge articulated by Kritzinger (2017, p. 17) maintained that "students who have access to digital devices connect to the internet (cyber space) and become vulnerable to cyber-risks and threats". A synthesis of literature in Kritzinger's (2017) paper indicated that although several first world nations have incorporated cyber safety into their schools' curriculum, the majority of developing nations including South Africa have limited or no adequate measures for school learners' cyber safety.

An empirical study by Razzak (2015, p. 312) revealed the challenges that teachers face in implementing digital learning: "(a) heavy teaching workload and increased responsibilities reduces planning time to create digital lessons; (b) lack of knowledge and skills to integrate digitals; (c) limited digital resources; (d) inadequate number of computer labs for digital

lessons in schools; (e) frequent technical problems with computer networks and insufficient technical support; (f) inadequate funding for digitals; and (g) not enough autonomy designated to school leadership for setting digital direction". Other challenges reported in this study include a lack of high quality teaching software in indigenous languages – most being available in English which poses a challenge to teachers in countries where English is not the official language (Razzak, 2015), including South Africa, where there are 11 official languages. A significant challenge reported by Razzak (2015) was older and traditional teachers' refusal to integrate digitals. Interestingly, a study by Mehdinezhad and Mansouri (2016) concluded that principals' digital leadership activities can bridge the gap between teachers who are comfortable with digitals and older teachers who are less comfortable, by developing a safe and slowly evolving digital work atmosphere in which teachers feel inspired and motivated to be creative. The provision of a conducive digital age school environment (Bates, 2015) can counteract issues of low teacher motivation. Principals need to take cognisance of their leadership practices and behaviours that create a supportive environment (Shepherd-Jones & Salisbury-Glennon, 2018) as "principals are often unaware of teachers' perceptions of their behaviours, and their behaviours sometimes had unintended effects on staff members" (Helms, 2012:2).

A study by Al-Fudail and Mellar (2008) cited further challenges experienced by teachers in implementing digital age learning which includes stress over the use of digitals. One of the main results of that study was that teachers suffered technostress associated with the use of digitals in the classroom. Technostress arose from lack of fit between teachers and the technological environment, the demands of the technological environment, teachers' skills and needs as well as the supply of digitals.

Another key barrier is that current school leadership constructs are still primarily vested in traditional roles of managing rather than leading schools (Greaves et al., 2012). The research indicated that principals remain focused on traditional management responsibilities rather than digital leadership practices because of overwhelming accountability of management tasks instituted by governments and districts (Alvoid & Black, 2014; Pollock, Wang, & Hauseman, 2015). Furthermore, Pollock et al. (2015, p. 537) concluded in their study that leadership practices are "subject to factors that exist within and beyond schools" which "moderate the way that principals carry out their work and limit their choices in exercising their professional autonomy". In addition, many principals lack skills, capabilities, and preparation to lead

constantly changing learning environments (Fullan, 2013). A research paper by Mestry (2017) revealed that most school principals appointed in South Africa do not have any professional training or formal preparation for their position. This raises questions about their feasibility to implement added digital leadership practices in an age that demands a shift to more innovative practices for leading digital age learning. Taylor (2013) noted in the 2013 DBE National Education Evaluation and Development Unit (NEEDU) report that the appointment of South African principals in some provinces have been subject to teacher union interference, nepotism, and corruption instead of merit. These findings suggested a gap in principals' skills to cope with the changing needs of leading digital age learning.

Another barrier is the decentralisation of responsibilities from state to schools (Marishane, 2013 cited in Maifala, 2016). Decentralisation has significantly increased the managerial functions of South African school principals that are far removed from the new expectations of the 21st century (Maifala, 2016) which revolves around leadership practices rather than managerial roles (Greaves et al., 2012).

A significant challenge is non-aligned systems for digital age education. South African schools are ready but current systems obstruct digital leadership (Meyer & Gent, 2016; van der Elst, 2016; Venter et al., n.d). Multilevel system wide change (Meyer & Gent, 2016) is needed to align and prepare systems for digital age education. Meyer and Gent (2016) stated that strategic preparation for effective change to digital age learning environments can be done through systematic evaluation alongside vision, policy and planning, curriculum and content, pedagogy, change management, ICT readiness, ICTs, support, and maintenance. School districts and head offices lack knowledge, expertise, and fear losing control (Mavuso, 2013; Mestry, 2017) and provide no support to schools as their focus is on output rather than input (Nkambule & Amsterdam, 2018; Vandeyar, 2013). Rigid, unprofessional, and untrusting bureaucracies in the South African education system (Levy, 2018; Naicker & Mestry, 2015; Williams, 2011) and the lack of funding to change digital infrastructures at schools (Meyer & Gent, 2016) further hamper leadership in the digital age. As such, education departments need to assess their funding strategies in line with policy objectives and educational goals that effectively support education reform and thus develop funding allocation mechanisms necessary for digital age education (OECD, 2017a).

Despite all these challenges, digital learning environments continue to grow at a phenomenal pace across the globe, including South Africa. The success of implementing digital leadership

in South African schools entails navigating through many of the barriers outlined. However, digital leadership in schools can be enhanced by understanding and fostering the opportunities and conditions that cultivate and support it.

2.7 Enabling Conditions and Opportunities that Support Digital Leadership

Fullan, Langworthy, and Barber's research (2014) pointed to five enabling conditions for leadership in 21st century learning environments that may be applicable to digital leadership. The first condition is vision which can make new digital practices visible to all stakeholders in digital learning environments. Another factor that may enhance digital leadership is developing measures to support learning, with the third condition being that professional learning can support digital leadership in building pedagogical capacity. The fourth condition is the provision of ubiquitous technology which needs learning partners and modelling of the use of digital tools and devices; the fifth condition is evaluating new practices using digitals (Fullan et al., 2014).

Kemp (2015) argued that principals require key factors to organise digital age learning which suggests that digital leadership may be enhanced by the factors of agency (a culture of student engagement and student directed learning); ubiquity (pervasiveness of digital technologies); connectedness (building knowledge on digital networks); infrastructure (environmental and infrastructural changes consistent with flexible learning contexts and broadband connectivity); costs (renewing equipment and infrastructure); technical support (upgrading hardware and software and the provision of technical expertise); and equitable access (having the digitals needed to learn and succeed).

Zhong (2017) suggested that digital leadership can be encouraged by providing opportunities of accessing digital age learning environments for teachers, learners, and parents while Domeny (2017) stated that digital leadership is enhanced when leaders create safe environments by protecting learners' and teachers' privacy through security software in online spaces (US State Department, 2017).

An important condition of digital leadership is that principals work with teachers to create digital environments (Lynch, 2018). Access to digital educational resources and a commitment to digital age learning can create opportunities for principals to build digital age learning environments through aligning resources to instruction, sound hiring practices, professional development, and being au fait with digital matters (Lynch, 2018). However, in the absence of

supportive work environments for digital age learning, individuals may be discouraged by ongoing challenges; hence, district support is needed to improve digital age learning by supporting and enabling principals to develop their digital leadership capabilities (Lynch, 2018).

ISTE (2009) developed 14 essential conditions that could support digital leadership in digital age learning environments. These are:

- *Shared vision*: proactive leadership develops a shared vision for digitals among all education stakeholders.
- *Empowered leaders*: stakeholders empowered to be leaders in effecting change.
- *Implementation planning*: all stakeholders follow a systematic plan aligned with a shared vision for school effectiveness and student learning through the infusion of digitals.
- *Consistent and adequate funding*: ongoing funding supports technology infrastructure, personnel, digital resources, and staff development.
- *Equitable access*: all students, teachers, staff, and principals have robust and reliable connectivity and access to current and emerging technologies and digital resources.
- *Skilled personnel*: educators, support staff, and other leaders are skilled in the selection and effective use of digitals.
- *Ongoing professional learning*: educators have ongoing access to technology-related professional learning plans and opportunities and time to practice and share ideas.
- *Technical support*: educators and students have access to reliable assistance for maintaining, renewing, and using digitals.
- *Curriculum framework*: content standards and related digital curriculum resources align with and support digital age learning and work.
- *Student-centred learning*: planning, teaching, and assessment all centre on the needs and abilities of the students.
- *Assessment and evaluation*: teaching, learning, leadership, and digitals are continually evaluated.
- *Engaged communities*: principals develop and maintain partnerships and collaboration with the community, business, and other sponsors to support and fund digitals.
- *Support policies:* policies, financial plans, accountability measures, and incentive structures support digitals for both learning and district/school operations.

- *Supportive external context*: policies and initiatives at the national, regional, and local levels support schools and teachers in the effective implementation of digitals for learning.

2.8 Chapter Summary

In this chapter a theoretical framework to support the research was developed. The literature revealed that longstanding leadership conceptions are evolving to brace new frontiers for leading in a fast progressing digital age and that digital leadership is closely aligned with disruptive digitals in pedagogy that favour digital environments. Digital forms of leadership encourage change and disruption in networked learning environments; hence, a principal's comfort zone is pushed beyond traditional roles resulting in nonconformist behaviours and mindsets to empower stakeholders to thrive amid transformation. Digital leadership shapes digital age environments and is dependent on the complex relationships between digitals and stakeholders and between the stakeholders themselves.

The literature emphasised that digital leadership practices can be used as a framework from which we can attempt to recognise how leadership is digital in public primary schools. It also questioned assumptions, such as what constitutes digital leadership practices and how this notion of leadership is perceived and experienced by both teachers and principals. This was the approach that I applied when conducting this research.

Leithwood et al.'s (2008) four leadership practices and connectivism (Siemens, 2005) provided a framework for digital leadership in schools where the primary focus is digitisation of learning. This is manifested through leadership practices that re-envision future learning, connects members, transforms the organisation, and cultivates conditions that support digital learning. Digitising schools is a dynamic process that thrives on disruptive digitals, data, and VUCA environments which demand disruptive leadership rather than conventional leadership. I take the position that all actions in schools are dependent on the connections amongst all stakeholders through digitals and the principal who needs to be the synapse between these networks.

The literature identified the relationship between PLNs and digital leadership; the connection between the Batho Pele principles and digital leadership; the guiding values of international and national professional standards for digital leadership; and the enabling conditions and opportunities that support digital leadership in digital age learning environments. The main

barriers facing digital learning and leadership in schools were also highlighted which included the digital divide; cyber safety; teacher's challenges; traditional management roles together with inadequate digital skills and qualifications of principals; non-aligned systems; and decentralisation. Therefore, an immediate challenge for the implementation of digital leadership in schools is to re-envision principals' practices, develop digital skills amongst stakeholders, and bridge the digital divide in communities. The next chapter describes the research paradigm, research design, and methodology used in this study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter is concerned with the selection of a research paradigm and approach that best suited the research aim which was to investigate teachers' perceptions and experiences of their principals' digital leadership practices in selected South African public primary schools in the Gauteng West district. In exploring this aim, the research objectives of the research are reiterated as follows:

- To explore teachers' perspectives on their principals' digital leadership practices for digital age learning.
- To identify the support that teachers think is needed to enhance their principals' digital leadership.
- To identify what challenges teachers think pose a barrier to principals' digital leadership.

Based on the above aim and objectives, the main research question was:

- What are teachers' perceptions of Gauteng public primary school principals' digital leadership practices for leading digital age learning in their schools?

The discussion commences with the research paradigm followed by the research approach, a detailed account of the research site, participant selection, and data generation processes that were chosen to conduct this qualitative inquiry. This will be followed by a description of the quality issues in evaluating this study and the ethical considerations.

3.2 Research Paradigm

Guba and Lincoln (1994) defined a research paradigm as a basic set of beliefs or a worldview that guides a study. It concerns the ontological and epistemological location of a study. My qualitative study was located within an interpretive paradigm. The interpretive or "constructivist paradigm" (Al Riyami, 2015; Kivunja & Kuyini, 2017) assumes that knowledge is socially constructed rather than objectively determined (Carson, Gilmore, Perry, &

Gronhaug, 2001). According to Rossman and Rallis (2003) as cited in Kholomeydik (2012, p. 26): "Meaning is constructed by participants as they go about their everyday life". Participants thus create reality through their own interpretations and subjective experiences in their natural setting. Interpretive research seeks to understand these socially constructed, subjective experiences of participants' realities (Al Riyami, 2015; Creswell, 2014) and the various, multiple meanings participants attribute to them (Creswell, 2014; Merriam, 2009) by relying on participants' views of the phenomena being explored (Creswell & Creswell, 2018).

Kivunja and Kuyini (2017) maintained that the interpretivist paradigm assumes a subjectivist epistemology (i.e. I can make meaning of the data through my own cognitive processing of data informed by my interactions with the research participants in the natural setting); a relativist ontology (i.e. I can explore multiple realities and make meanings of them through my interactions with the research participants); a naturalist methodology (i.e. I can use data gathered through interviews with the research participants in their natural setting); and a balanced axiology (i.e. my research will reflect both my beliefs and a balanced description of the findings from the data provided by the research participants). As such, interpretive research extends beyond causal relationships to seek organic ways in which the phenomena under study are manifested in their social context. Consequently, interpretive research goes further than what has occurred: it investigates to see the manner in which it has occurred (Lin, 1998). As the interpretive paradigm is concerned with participants' perceptions and meaning making (Dean, 2018) of the phenomena under study, my research was located in the interpretive paradigm as the purpose of my study was not only to obtain a rich, in-depth description and interpretation of the meanings the research participants were making of their principals' digital leadership practices in the natural context, but also to make sense of such meanings by exploring, interpreting, and understanding these perceptions.

3.3 Research Approach

Given the location of my study within the interpretive paradigm, a generic qualitative approach was appropriate to achieve my research aim. A generic qualitative approach is research that seeks to understand how people interpret their experiences, how they construct their worlds, and what meanings they attribute to their experiences (Merriam, 2009). Further to this, Percy, Kostere and Kostere (2015, p. 78) regarded generic qualitative studies as investigating "people's reports of their subjective opinions, attitudes, beliefs, or reflections on their experiences, of things in the outer world".

In addition, interpretive generic qualitative inquiry does not require the testing of a hypothesis as in post positivism (Creswell, 2014). There is freedom to describe the phenomenon being explored as it exists in its natural context (Kennedy, 2016). Thus, a generic qualitative inquiry was most appropriate for my study pertaining to the perceptions of principals' digital leadership practices from participants in the South African context, specifically in the Gauteng West district.

The generic qualitative approach allowed me to interview participants with the aim of developing rich, thick descriptions from their perceptions and experiences of their principals' digital leadership practices. The data generation processes used to collect data in this study are discussed in the next section.

3.4 Research Site and Participant Selection

3.4.1 The research sites

My study was a relatively small one, in that it was based on three South African public primary schools in the Gauteng West district. I selected this province because it was reputed to be tech-savvy and revolutionary in digital innovation in the education sector. Gauteng is one of two provincial departments of education among nine departments in South Africa that "have developed projects aimed at ICT integration and are pioneers in the pedagogical use of technology" (Mlambo et al., 2020, p. 1). In addition, the initiation of the Gauteng Online (GOL) programme (SA GDE, 2013) and the implementation of the smart classrooms project (Lesufi, 2014); the South African School Management System (SA SAMS) (SA GDE, 2016b); the DBE Dashboard (SA DoBE, 2017a); online admissions (SA GDE, 2016a) and the DDD programme (SA DoBE, 2014) are digital initiatives geared towards transforming schools in the province into digital institutions. These initiatives are in line with the *Policy on The Standards for South African Principals* (SA DoBE, 2016b) that define the behaviours and activities of principals in leading digital age teaching and learning in schools.

Despite the many challenges facing schools in South Africa such as poor infrastructure, overcrowding, and inadequate resources (Marais, 2016), Gauteng schools have begun to embrace the provincial e-learning programme of a paperless education system in a move towards transforming schools as relevant for the digital age (Lesufi, 2014). I selected the Gauteng West district as the research site as it is a Data Driven District that seeks to improve student learning outcomes by improving data quality through digitals (SA DoBE, 2014).

Furthermore, despite being one of the poorest areas in the province, the Gauteng West district (Hamann, 2016) has begun the implementation of province-wide ICT programmes (Farrell, Isaacs, & Trucano, 2007; Mlambo et al., 2020; SA GDE, 2015) in many schools in the district through the assistance of GDE and GOL which provides email addresses, free internet access, and a technology-enabled learning environment to all students in public schools (SA GDE, 2013). In addition to this, the Gauteng West district has engaged in partnerships with NGOs to train their e-learning staff at the Gauteng West District Teacher Development Centre on digital technical challenges, digital skills for teachers, the Microsoft Digital Literacy programme, administrative tasks, and basic coding to support schools' ICT implementation across the district (SchoolNet, 2018). The job description of principals in South Africa (SA DoBE, 2016a) places the responsibility of overseeing the implementation of digital initiatives in schools on them. Therefore, it was intriguing for me to explore Gauteng principals' digital leadership practices which drive these digital programmes in schools in this area.

3.4.1.1 Contextual overview of the three selected schools

Qualitative research generally seeks to achieve a deep understanding (Patton, 2002) by making sense of a phenomenon from the perceptions of the participants (Merriam, 2002), therefore, it is important to choose a sample from which we can learn the most (Patton, 2002). Purposive sampling was used to select three types of primary schools based on the differing levels of digital implementation and digital activities as these are behaviours associated with principals' digital leadership practices. The main criteria for selection of schools for this study were: level of digital curriculum activities and digital communication activities; implementation of the standards for South African principals (SA DoBE, 2016b) through the roll out of the Information Communication Technology (ICT) programme; utilisation of GOL programmes and DBE digital tools that include SA SAMS modules, DBE dashboard, and Valistractor usage; and implementation of online admissions.

Assistance for selection of schools was provided by the curriculum unit of the Gauteng West district. According to the curriculum unit, School X located in a middle class suburb with a somewhat disadvantaged past has good digital infrastructure and digital tools and was evaluated as effectively implementing digitals with considerable curriculum related digital activities (category 1); school Z located in a middle class suburb with an advantaged past has sufficient digital infrastructure and digital tools and was evaluated as moderately implementing digitals with adequate curriculum related digital activities (category 2) and School Y located

in a poor community with a severely disadvantaged past has insufficient digital infrastructure and digital tools and was evaluated as satisfactorily implementing digitals with limited curriculum related digital activities (category 3).

3.4.2 Participant selection

I used purposive sampling to select six teachers at each of the three schools. These teachers needed to have had more than five years of teaching experience at their school which would provide them with adequate experience of digital leadership, development, and practice. As there were more than six qualifying teachers at one of the schools, I asked the principal to select six names from a hat. The School X participants comprised of four females and two males. At School Y, all six participants were female. One participant withdrew from the study before the interview due to an unexpected meeting. The participants at School Z consisted of five females and one male, however, one of the participants did not show up for the interview. Altogether there were 16 participants of whom 13 were female and three were male. The uneven numbers in gender, according to the three principals, was a result of their schools having a predominantly female staff. The high probability of gender disparity in South African public schools can be attributed to the DBE employing 73.5% female teachers and 26.5% male teachers across the sector (Memela, 2017).

The principals, one female and two males, of the selected schools (as described in Sections 3.4.1 and 3.4.2) had been principals of their schools for five, 21 and five years, respectively. This is long enough for them to have experienced both the pre-digital and currently evolving digital learning environments in DBE schools. Each of them was in a position to share their digital leadership development and practices. Below is a table highlighting the legends used when presenting the data in Chapter Four.

Table 3.1: Participant information

School	Focus group	Focus Group code	Respondent Code
X	1	FGI1	Respondent 1
			Respondent 2
			Respondent 3
			Respondent 4
			Respondent 5
			Respondent 6
Number of Participants			6
Y	2	FGI2	Respondent 1
			Respondent 2
			Respondent 3
			Respondent 4
			Respondent 5
Number of Participants			5
Z	3	FGI3	Respondent 1
			Respondent 2
			Respondent 3
			Respondent 4
			Respondent 5
Number of Participants			5

3.5 Data Generation

My study was set in the context of three GDE public schools where the participants were exposed to their principals' digital leadership practices based on school-centred digital initiatives aligned to the *Policy on The Standards for South African Principals* (SA DoBE, 2016b). Data was generated using focus groups and individual interviews (Black & Plowright, 2010) within the interpretive paradigm, as reality exists in research participants' perceptions and experiences. Document analysis was also used to generate data to better understand and interpret the meanings behind school principals' digital leadership practices in leading digital age learning and thus best answer the research question.

It was vital to explore teachers' perceptions on this topic as self-report data, "particularly information generated from principals may provide responses that are more socially desirable or acceptable than others" (OECD, 2017b, p. 272); subsequently, principals may view themselves as having effective digital leadership practices but ultimately it is teachers' positive perceptions of their principals' digital activities that will deem them to be effective in leading digital age learning, as "principals cannot survive if teachers and staff do not believe in their leadership" (Gimbel, 2003 cited in Helms, 2012, p. 2). Thus, focus group interviews with teachers were used to generate teachers' perceptions and experiences of their principals' digital leadership practices in its natural context. Thereafter, document analysis was conducted on the

three schools' official public digital spaces. Individual interviews were later conducted with principals to generate their experiences and perceptions of their digital leadership to provide a more complete perspective.

3.5.1 Focus group interviews

The first data generation process involved the exploration of teachers' perceptions of the phenomenon of digital leadership in the selected schools. Data was collected through one focus group interview at each of the three schools comprising of six teachers in School X, five teachers in School Y and five teachers in School Z. Focus group interviews explore the perceptions of a homogenous group of participants (Krueger & Casey, 2009) who are known to be rich sources of data to gather high-quality data about a phenomenon within a social context (Patton, 2002). Thus, I selected teachers that were employed in Gauteng public primary schools under the administration of the GDE with similar employment conditions who had contextual knowledge and daily experience of their principals' digital leadership practices. Homogeneous groups enable more favourable circumstances in offering "participants a relatively safe environment in which to share their experiences" such as a supportive and nurturing environment (Barbour, 2005, p. 743) regarding the phenomena under discussion. This environment therefore enabled me to ensure from the outset of the interviews that the research participants felt comfortable enough with me to ask for clarity during the interviews as well as express themselves freely, resulting in more authentic and rich data. According to Kitzinger (1999), a significant feature of focus group interviews is the group dynamic. This dynamic gave me the opportunity to ask questions in an interactive group setting where the research participants were free to talk with other members of the group as well as explore and clarify their views. The focus group interviews comprised of semi structured and open-ended questions to explore participants' perspectives and allowed for probing responses from participants pertaining to digital leadership practices in their schools.

Upon reflection, qualitative research generation techniques enabled me to understand the research participants' beliefs, opinions, and attitudes (Vermeire et al., 2002) concerning their principals' digital leadership practices in the context of their schools. These techniques assisted me in interpreting their multiple perspectives, as well as "how they can hold, can change their views and develop their thinking in the process of interaction with other people about the topic of interest" (Vermeire et al., 2002, p. 104). Some of the research participants exhibited these dynamics during the three focus group interviews where they queried aspects under discussion

from each other (Morgan & Krueger, 1993). For instance, when asked whether WhatsApp was the only social media platform used in the school, one respondent (I2:L222) in School Y voiced uncertainty on this issue, looked at the rest of the participants in the group and then enquired information on this aspect from them which resulted in another participant (I2:L224) providing a response of: *"Facebook page"*. I was particularly intrigued by a few of the participants who arrived at conclusions and realisations that they had not come into the interviews with; for example, when I asked participants the following question: "Of all the things we've discussed in the interview today, what to you is the most important thing?", a participant in School Y responded (FGI2:L650) that she had never given any thought to the need for digital learning training before this interview. I also found that focus group interviews allowed me to be flexible (Villard, 2003) as I was able to probe responses for clarity or examples of vague or important points as they were articulated in the interviews, thereby generating more data from the research participants (Morgan, 1997).

My experience with focus groups in this study was that group dynamics (Kitzinger, 1995) influenced the discussion. Prior to my field study, I planned for the possible influence of group interactions and approached the moderation of my focus group interviews in a manner that encouraged a directed and free conversation about the topic. However, during the focus group interviews the discussions took some unanticipated turns as participants spontaneously raised issues not necessarily intended or predicted by me (Sim & Waterfield 2019). As a result I asked questions that were not on the interview schedule such as (FGI3, L882): "Does your LTSM allow you to procure for digital devices?" which was constructed on issues around funding and availability of digitals for teaching that was raised by participants. As a result I was able to probe deeper into new ideas and gather more valuable information (Prasad & Garcia, 2017) such as funding and legislation regarding the procurement of digital LTSM in South African public schools and availability of digital resources in South Africa.

Furthermore, my experience as a whole with focus group interviews in this study was more time consuming than I had anticipated with regards to the transcription and interpretation of data from the three focus groups (Villard, 2003); nevertheless, I discovered that focus groups were useful for achieving the objectives of my study as they enabled the topic under inquiry to be exhaustively discussed resulting in the emergence of clear patterns and multiple views of principals' digital leadership practices (Nyumba, Wilson, Derrick, & Mukherjee, 2018).

3.5.2 Document analysis

After the focus group interviews were completed, I conducted a document analysis which according to Bowen (2009) is a systematic procedure for reviewing or evaluating documents – both printed and electronic. I decided to review documentation on the three schools' public digital spaces for digital leadership activities. I went over School X's public website and School Y and Z's Facebook profiles in search of evidence for digital leadership for the purpose of data triangulation, which will be discussed later on in this chapter under trustworthiness.

3.5.3 Individual interviews

Thereafter, I conducted individual interviews with school principals to get their side of the story of digital leadership for the purpose of data triangulation. The interviews conducted with principals comprised six semi-structured interview questions (see Appendix 8). According to Gill, Stewart, Treasure, and Chadwick (2008, p. 292), interviews "explore the views, experiences, beliefs and/or motivations of individuals on specific matters" such as principals' perceptions and experiences of their personal digital leadership. Interviews are also most appropriate where little is known about the study phenomenon (Lambert & Loiselle, 2008) such as principals' digital leadership practices in South African schools. Consequently, I was able to gather a wider range of perceptions including data from principals relating to their own specific digital leadership practices in leading digital age learning at their individual schools.

3.6 Data Analysis

My study utilised the generic qualitative approach located within an interpretive paradigm which is "highly inductive" and makes use of "open codes, categories, and thematic analysis are most common" (Lim, 2011, p. 52) to "scrutinize the body of data in search of patterns—subjectively identified—that the data reflects" (Leedy & Ormrod, 2015, p. 100).

After all the focus group and individual interviews were conducted and recorded using an audio recorder, I transcribed the data from the focus groups and from the individual interviews (see Appendix 7). I then carefully checked the transcripts against the audio recordings and found that the interview recordings were correctly transcribed although in a few instances audibility was a challenge.

I then coded the data from the interviews and document analysis using Braun and Clarke's six-phase framework (Braun & Clarke, 2006) which provided a clear and usable approach for doing thematic analysis (Maguire & Delahunt, 2017). Braun and Clarke's (2006) six-phase framework employs a reflexive approach where coding precedes theme development and themes are built from codes (Braun, Clarke, Hayfield, & Terry, 2019). I coded the data and thereafter identified themes and sub themes by interpreting and making sense of the research participants' responses to gain a comprehensive understanding of the data, using Braun and Clarke's (2006) six-phase framework method indicated in Table 3.2 below.

Table 3.2: Braun and Clarke's six-phase framework steps for executing a thematic analysis

Step 1: Become familiar with the data
Step 2: Generate initial codes
Step 3: Search for themes
Step 4: Review themes
Step 5: Define themes
Step 6: Write-up

Source: Braun and Clarke, 2006

I include in the next sub section examples of how I coded the data using Braun and Clarke's six-phase framework steps.

3.6.1 Braun and Clarke's six-phase framework steps

3.6.1.1 Step 1: Become familiar with the data

I first conducted a thorough overview of all the data collected from the focus group interviews and individual interviews by carefully listening to the audio recordings then reading through all the transcripts several times. Thereafter, I searched the official public digital spaces of the

three schools for evidence of digital leadership (Braun & Clarke, 2006; Caulfield, 2019; Maguire & Delahunt, 2017).

3.6.1.2 Step 2: Generate initial codes

I used open coding which allowed me to create codes directly from the participants' responses in the transcripts (Braun & Clarke, 2012; Saldaña, 2015). I highlighted phrases and sentences in the transcripts from the focus group interviews, individual interviews, and document analysis and then established codes relevant to the research question (Braun & Clarke, 2012) to describe the content as explained in Figure 3.1 below (Braun & Clarke, 2006; Caulfield, 2019; Maguire & Delahunt, 2017).

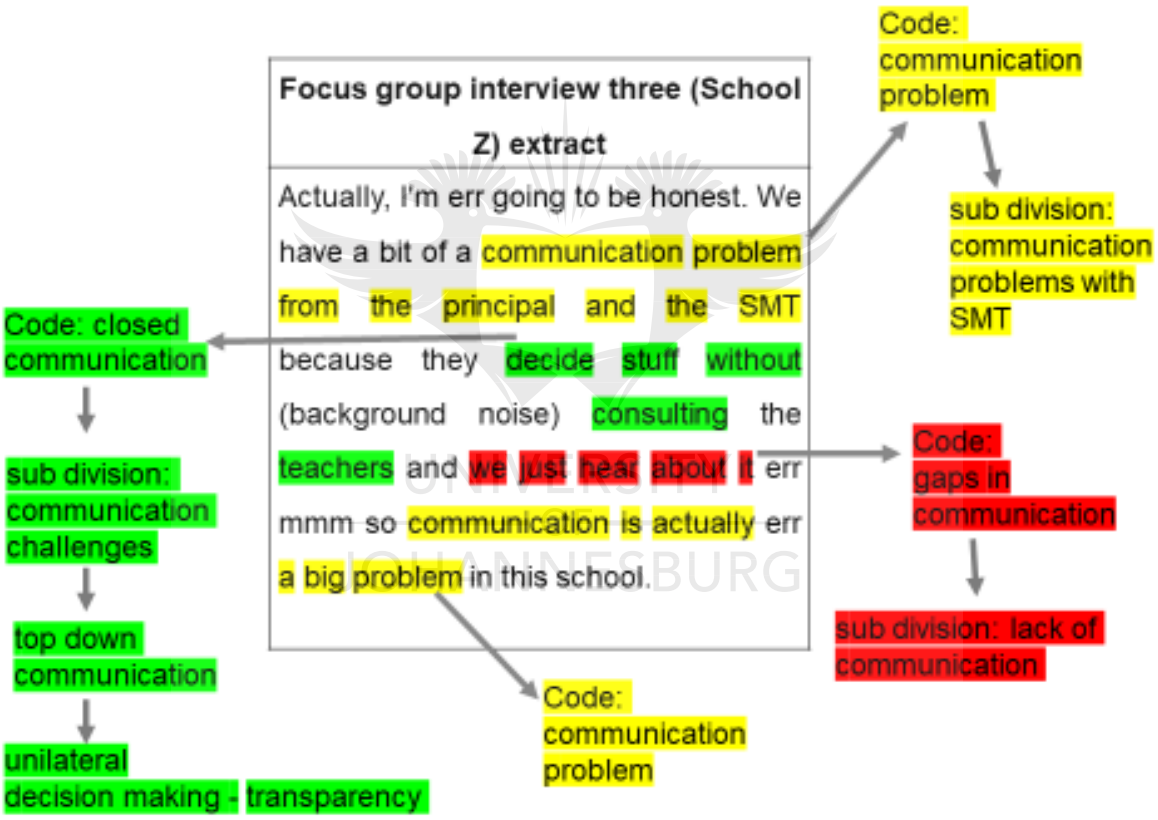

Figure 3.1: Generation of initial codes using Braun and Clarke's six-phase framework steps (researcher's own)

In my study, coding was dependent on my exploratory analysis of the data (Saldaña, 2015). Figure 3.1 shows highlighted phrases and sentences in different colours with corresponding codes to label and describe an idea or emotion voiced by participants in that part of the transcript (Braun & Clarke, 2006; Braun & Clarke, 2012; Caulfield, 2019). New codes were

added as I went through all the transcripts. After going through all the transcripts several times to ensure thoroughness, I organised all the data into meaningful groups identified by codes which provided a synopsis of the main points in the data (Braun & Clarke, 2006; Maguire & Delahunt, 2017). For example, my code 'closed communication' had a sub division of 'communication challenges' which was linked to 'top-down communication'; however, because participants implied unilateral decision-making under this code, I expanded this code to 'transparency' to make it a better fit for what participants had voiced (Braun & Clarke, 2012), specifically about leadership practices in their schools in relation to digital leadership.

The search for themes from the codes I identified was the next stage of thematic analysis, which I elaborate on in step three.

3.6.1.3 Step 3: Search for themes

Themes are broader and involve interpretation of the codes that capture something important in relation to the research question (Braun & Clarke, 2006).

I examined the codes I had come up with together with their accompanying extracts. The codes revealed areas of similarity and overlap between them (Braun & Clarke, 2012). I grouped codes that "shared unifying features which described meaningful patterns in the data to establish broader themes" (Braun & Clarke, 2012, p. 7). In my data, I noticed codes grouped around communication which focused on participants' experiences of closed communication, problems, or challenges associated with communication and gaps in communication connected to their school leadership. Based on the close relationship between these codes, I then constructed one theme using all the codes. I decided that the code 'communication' made sense as a theme as it was directly linked to digital leadership practices and my research question. I demonstrate in Figure 3.2 below, how I grouped related codes into the 'communication' theme.

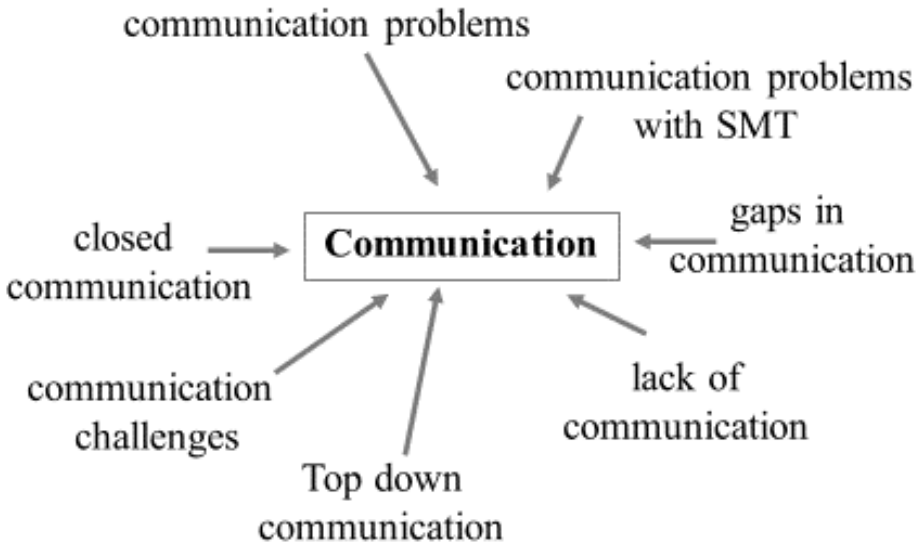

Figure 3.2: Grouping codes into themes using Braun and Clarke's six-phase framework Steps (researcher's own)

3.6.1.4 Step 4: Review themes

In order to ascertain if my themes were consistent and suitable depictions of the data, I returned to the data set and compared my themes against it (Braun & Clarke, 2006 cited in Maguire & Delahunt, 2017; Caulfield, 2019); for example, after looking through the data again, I decided that 'gaps in communication' fit better as a sub theme than 'communication problems' under the theme 'communication', since the data labelled with this code involved areas of poor communication due to a lack of proper communication protocol and not necessarily a harmful matter.

3.6.1.5 Step 5: Define themes

Once I had confirmed the themes, I used simple names for each theme and I defined them by stating their meaning and establishing how each theme helped me to understand the data (Braun & Clarke, 2006 cited in Maguire & Delahunt, 2017; Caulfield, 2019); for example, I looked at 'electronic forms of communication' and determined exactly what aspects of such communication constituted digital leadership practices in this theme. I decided that a better name for the theme was 'social media applications' as sharing electronic information, ideas, personal messages, and other content via social media was prevalent in the data and strongly connected to digital leadership (Sheninger, 2014).

3.6.1.6 Step 6: Write-up

I then wrote a thematic analysis of the data in Chapter Four based on the patterns in each theme within the qualitative data. I described the themes and sub themes (stated and implied) and included examples from all the data as evidence (Braun & Clarke, 2006 cited in Maguire & Delahunt, 2017; Caulfield, 2019).

In Chapter Five, I present the interpretation of my thematic analysis. I describe, through the interpretive lens, how I made meaning of the findings that arose from significant themes relating to principals' digital leadership practices in the data. My discussion also includes how the research objectives of my study were addressed.

3.7 Trustworthiness

Trustworthiness is about the extent of confidence in the data, interpretation, and methods used to ensure the quality in a study (Elo, Kääriäinen, Kanste, Pölkki, Utriainen, & Kyngäs, 2014; Korstjens & Moser, 2018). In establishing trustworthiness in my qualitative study, I used the four strategies of credibility, transferability, dependability, and confirmability (Guba & Lincoln, 1981) and explain in the following paragraphs how these were addressed in my study.

3.7.1 Credibility

Credibility is defined as the confidence that can be placed in the honesty of the research account (Lincoln & Guba, 1985) by determining whether the research findings represent plausible information drawn from the data (De Vos et al., 2011; Lincoln & Guba, 1985). To address credibility in my study I used data collection triangulation (data from multiple sources through different methods namely focus group interviews, individual interviews, and document analysis to answer the same questions) to check the consistency of the findings, as well as convincing arguments and authentic data which supported descriptions of the phenomena under inquiry (Creswell, 1998; Lincoln & Guba, 1985).

I also used referential adequacy, advocated by De Vos et al. (2011), as a means to check preliminary findings and interpretations against the raw data (Lincoln & Guba, 1985). I deemed the preliminary findings and interpretations as trustworthy since the data was allowed to "speak for themselves" through the emergence of themes (Cleland, 2017; Suter, 2012) which aligned with the reality constructed by the research participants in this study (Guba & Lincoln, 1981; Merriam, 1998).

I also employed strategies to safeguard credible participation in the interviews. All participants were given the opportunity to refuse participation in this study without any penalty and understood their right to withdraw from the study at any time. These strategies ensured that data collection involved participants who honestly and freely wanted to contribute data (Shenton, 2004).

3.7.2 Dependability

Dependability refers to the stability of data over time and is concerned with the consistency between the conclusions (which are dependent on the participants and the conditions of the study rather than on the researcher and methods) and the data collected in a study (Lincoln & Guba, 1985; Miles & Huberman, 1994). To achieve dependability, I detailed earlier in this chapter a precise description of criteria for selecting research participants as indicated by Elo et al. (2014) and thick descriptions of the context as advocated by Nowell, Norris, White, and Moules (2017) to ensure stability of the data over time that transverses researchers and methods (Miles & Huberman, 1994). Further to this, I established dependability in my study by employing qualitative dependability procedures such as personally authenticating all the interview transcriptions to prevent inaccuracies and making constant comparisons with the data and the codes I generated to ensure that the allocated codes reflected the correct interpretation of data (Gibbs, 2007).

3.7.3 Transferability

Transferability relates to the applicability of findings in other contexts and settings (Lincoln & Guba, 1985). According to Guba and Lincoln (1989), transferability within the interpretative paradigm refers to the provision of rich contextual data descriptions for the reader to relate findings in the study to their own contexts. Shenton (2004, p. 70) further maintained the importance of "sufficient thick descriptions of the phenomenon under investigation … to allow readers to have a proper understanding of it, thereby enabling them to compare the instances of the phenomenon described in the research report with those that they have seen emerge in their situations". With this in mind, I endeavoured to provide enough rich, thick descriptions of the contextual data in the findings of this study with the hope that readers would be able to relate them to their contexts.

3.7.4 Confirmability

Confirmability, within the interpretative paradigm, refers to whether the research data can be tracked to its source (Guba & Lincoln, 1989) in terms of "how can one establish the degree to which the findings of an inquiry are a function solely of the subjects and conditions of the inquiry and not of the biases, motivations, interests, perspectives of the researcher (Guba, 1981, p. 80). Confirmability is thus premised on being aware of researcher bias to prevent contamination of the findings of a study by taking steps to "ensure as far as possible that the work's findings are the result of the experiences and ideas of the informants, rather than the characteristics and preferences of the researcher" (Shenton, 2004, p. 72). The steps I took to ensure confirmability are outlined in a physical research audit trail (see Appendix 9). This trail documents the stages of this study, reflecting on key research methodology decisions (Carcary, 2009) and data analysis processes as a rationale for decisions made to establish that participants' responses were correctly depicted in the study's findings (Korstjens & Moser, 2018).

3.8 Ethical Considerations

Firstly, approval from the Higher Degrees Committee of the Faculty of Education at the University of Johannesburg was sought to conduct this study (Appendix 1). Thereafter, clearance was obtained from the Ethics Committee of the Faculty of Education at the University of Johannesburg (Appendix 2). Consent was then sought from the Gauteng Department of Education to conduct research in the Gauteng West District (Appendix 3). The investigation at the research sites commenced with meeting the principals of the selected schools where formal written requests seeking permission from principals and school governing bodies to conduct the research were presented (Appendix 4). The participants were informed in a broad manner about the purpose of the research, as knowing too much about the research aims might have biased the data (Kalof, Dan, & Dietz, 2008). Informed consent was obtained from each participant prior to the focus group interviews (Appendix 5).

The participants were informed that their participation in the study was voluntary and that they could withdraw from the study at any time without penalty (Leedy & Ormrod, 2015). Based on my observation of and interaction with all participants, they were genuinely interested and keen to be part of this study. The data they contributed were their own, authentic perceptions in the context of their school which were articulated in a sincere manner. I also informed

participants that this research would take place after teaching time to avoid infringement on teaching and learning time. Anonymity of the participants and their institutions were kept confidential (Creswell, 2014). However, participants were informed before the interviews that one possible risk of focus group interviews is that complete confidentiality could not be ensured due to disclosures that may occur from participants within the focus group (Sim & Waterfield, 2019). Audio recordings of the interviews were stored securely and only my supervisors and I have access to the audio recordings of the interviews. I endeavoured to ensure that the rights, dignity, interests, and well-being of the study participants were safeguarded since the data was collected on mutual trust (Babbie & Mouton, 2008). The findings of the investigation will be made available to all participants for their information.

3.9 Chapter Summary

A full explanation of the research paradigm, research approach, research selection, and data generation techniques employed in this study were described in this chapter. I deliberated on the interpretivist paradigm which grounded my study as the philosophical framework and then described the rationale for a generic qualitative research approach. I then detailed the research selection process in my study. The generic qualitative approach was executed through data generation that took place through focus group interviews with teachers, document analysis and individual interviews with principals to triangulate the data.

In this chapter, procedures for data analysis, trustworthiness, and ethical procedures carried out were discussed. In the next chapter the analysis of data from the focus group interviews and individual interviews, together with the document analysis, will be presented.

CHAPTER FOUR

ANALYSIS AND INTERPRETATION

4.1 Introduction

The research paradigm, research approach, contextual overview of the research site and participant selection, data generation and data analysis processes used in this study were explained in Chapter Three. A generic qualitative design was used to investigate teachers' perceptions of principals' digital leadership practices in public primary schools in the Gauteng West District.

This purpose of this chapter is to present a triangulated analysis and interpretation of the focus group interviews, the individual interviews, and the document data. I explore the themes that emerged from the data in order to analyse teachers' perceptions of their principals' digital leadership practices in selected Gauteng West public primary schools. The principals are identified as Principal 1 (P1), Principal 2 (P2) and Principal 3 (P3) to protect their identity and the following legends are used to identify which focus group interview is being referred to and line numbers of transcripts: e.g. FGI1:L21.

4.2 Themes

The themes and sub-themes that were identified through the data analysis as explained in Chapter Three, are presented in Figure 4.1 on the following page.

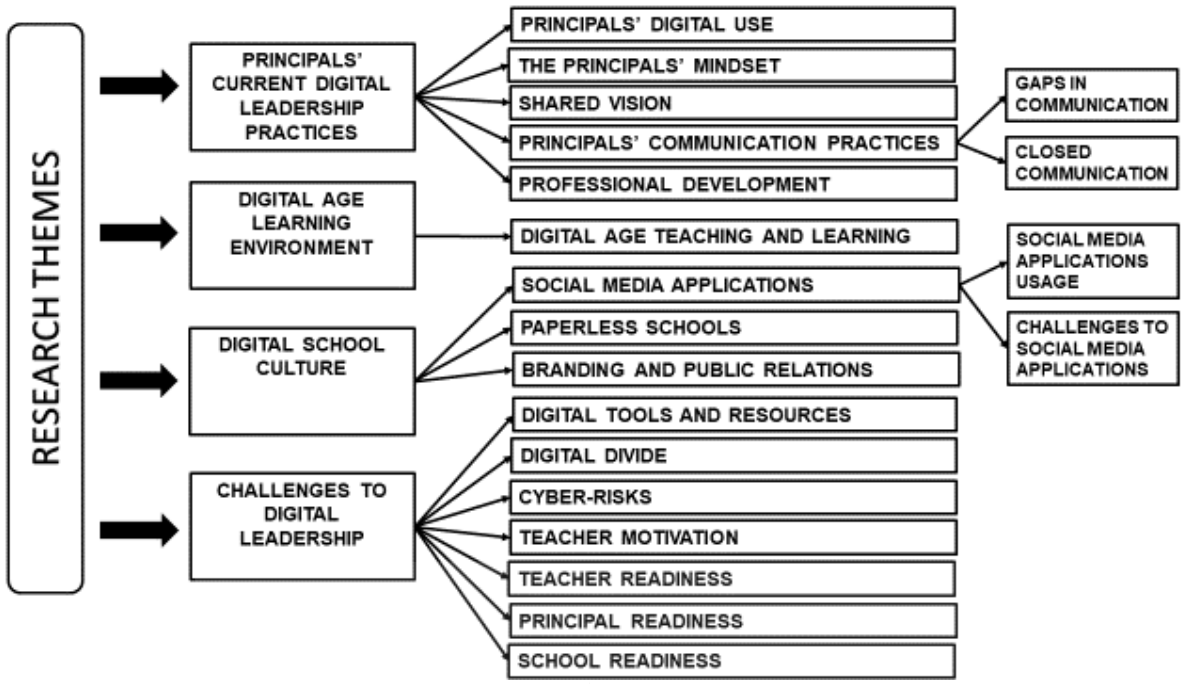

Figure 4.1: Research themes

The themes that have been listed in the above table will be discussed and supported with relevant examples from the interviews. The first theme that emerged was principals' current leadership practices.

4.2.1 Principals' current digital leadership practices

Five sub-themes were identified under the theme of principals' current digital leadership practices namely principals' digital use, the principals' mindset, shared vision, principals' communication practices, and professional development. Each one will be examined commencing with principals' digital use.

4.2.1.1 Principals' digital use

There is evidence in the data of digital usage in the current digital leadership practices of all three principals. The principals' digital usage in School X, was described by Respondent 6 (FGI1:L79) who was of the view that:

> *The principal is efficient on technology, meaning the school is moving towards everything being electronic like the other members have mentioned the SAMS, the textbooks, the LTSM, our newsletters. We have got a website, a web page where*

parents can go and get information on what's happening in our school and our principal mentioned that even the classrooms are going to have the biometric register system for students.

Respondent 5 noted that the principal of School X uses digitals for administrative tasks: *"Notices to parents are through SMS's and our school website"* (FGI1:L23); "*marks are digitally done, reports are also printed and student registers are done digitally"* (FGI1:L31); and "*the biometric system"* a digital staff attendance register is used for *"signing in and signing out"* (FGI1:L72).

Respondent 4's view (FGI1:L395) pointed to the principal's digital leadership practices that target digital use in teaching and learning: *"I'm designing a digital lesson for 6A"*. When questioned about how they would describe the teaching in their classes during a digital lesson, Respondent 5 (FGI1:L1846) stated: *"Currently at this moment in time, it is basic"*, which was echoed by Respondent 2 (FGI1:L1842) and Respondent 4 (FGI1:L1848) who immediately agreed with Respondent 5, remarking that their digital lessons were *"basic".*

When asked whether the principal allowed the use of Google Classroom (an interactive, online teaching and learning platform) which was mentioned by respondents at that school, Respondent 5 (FGI1:L561) replied: *"Yes it is allowed, some of us do have Google Classroom"*.

In School Y, Respondent 5 (FGI2:L51) noted that their principal uses digital tools for administrative tasks such as *"verification of the marks"* and *"capturing of the learners' attendance on a daily and weekly basis"*. Another respondent in School Y (FGI2:L30) associated digital tools in that school with managerial and administrative tasks by remarking: *"The only laptops we have are for management and the office filing"* (Respondent 2).

In School Z, respondents linked the principal's digital use to administrative tasks. This is reflected in various phrases, for example Respondent 5 (FGI3:L234) indicated that *"the registers"* are digital, while Respondent 4 (FGI3:L236-240) immediately added that *"the class lists"* and *"the profiles"* are digital, followed by Respondent 5 (FGI3:L242) who stated that *"demerits and merits, absenteeism"* are digital.

Respondents in School Z also associated their principal's digital use with teaching and learning. Respondent 1 (FGI3:L312) indicated that:

If we want to do something digital, most of our classes have whiteboards and some of the classes even have the Edu board which is the interactive boards, but we cannot use it, we don't have all the infrastructure. So, it's actually frustrating to have that, but you can't use it to its full potential.

Respondent 6 (FGI3:L262) had earlier in the interview explained the limited Wi-Fi infrastructure at that school by stating: *"We don't have internet. There's only internet at the office"*.

Two principals in the individual interviews associated their current digital leadership practices as digital use focusing on administration, management, and curriculum. P1 stated that he uses digitals for weekly tracking of curriculum management and attendance. P2 acknowledged that her digital leadership practices entail the use of digitals for the capturing of learner information.

In terms of principals' current digital leadership practices, respondents described their principals' digital use as digitising school administration and management with limited or no focus on teaching and learning. Principals' digital use, as shown by the data, has indicated that the principals have begun to develop new skills to digitally lead their schools which is essential to leadership in the digital age (Couros, 2013).

The development of an innovator's mindset in principals can expand their innovative and strategic digital leadership practices (Couros, 2013). As such, the principal's mindset concerning innovative and strategic leadership practices is discussed further in the next sub-theme.

4.2.1.2 The principals' mindset

Data from the three schools point to principals' current digital leadership practices as limited in terms of innovation and strategy in supporting learners' and teachers' digital needs. One participant in School X described their principal's limited innovative and strategic leadership practices as being attributed to a conventional mindset (FGI1:L1476) by claiming: *"I think it's 1910 and I think it needs to move to digital. We need to be more focused on what we need to achieve. If you want to achieve a certain amount of digital leadership, you can't be stuck in 1910's framework and 1910's frame of mind"* (Respondent 1). Respondent 5 in the same school concurred with Respondent 1 (FGI1: L300-306) stating: *"I think it's the future. I think it's already happening. I think that we need to roll the ball a bit faster, we are on our way, but it*

seems as if our opinions are not considered. I think the closed mindset of certain people in management limits ... the growth of technology in this school" (L307).

In School Z, the principal's mindset was not directly mentioned but came through in various statements. For example, all respondents described their principal's way of thinking in dealing with their digital teaching challenges as teachers themselves having to *"work around it"* (FGI3:L818). This view was elaborated on by Respondent 2 (FGI3:L829) who explained: *"When we have a challenge, it always comes down to we will work around it, so I can't ask for a solution. This is my problem for example I cannot show my children the technology videos because I cannot find the time, or I have to download it from the office but the people in the office are busy. How must I do digital teaching then the principal will say work around it"*. Respondent 2 (FGI3:L842) further affirmed this view of the principal's passive leadership practice in addressing teachers' digital teaching challenges stating that the principal's approach is: *"I'll make a plan"* and an overwhelming response erupted from all respondents of: *"No… no"* (FGI3:L848) when asked if the principal does make a plan.

The need for an innovator's mindset at School Y to change the current digital teaching and learning situation at that school was evident from the overall interview. All respondents described that the limited availability of digitals at that school hampered digital age learning. Respondent 2 (FGI2:L25) declared: *"We don't have a lot of technology in this school"* and that digital *"availability is limited to us educators"* (FGI2:L43). Respondent 9 (FGI2:L193) also voiced a similar sentiment in stating: *"My experience is that some teachers get a little bit frustrated"* as *"sometimes they don't have their photocopies of tasks on time because we got only one photocopy machine so copies are not supplied on time so I think it's a bit frustrating not to have technology"* (FGI 2:L198).

When asked about the type of digital teaching and learning taking place at that school, Respondent 2 (FGI2:L473) remarked: *"I'd say it is not really taking place because of the infrastructure of the school"*.

Respondents in School X implied that their principal's limited innovative and strategic digital leadership practices were related to their conventional mindset, which consequently has hampered digital age learning at that school as teachers' digital teaching needs have not been met. The teachers' needs were indicated by Respondent 4 (FGI1:L395) who mentioned that, *"the problem is that now when I'm designing my lessons I'm designing a digital lesson for 6A*

and then when it comes to 6 B, C and D I'm still on chalk. So, this is even though we're taking a step forward. For me it's like actually double preparation because I have to prepare chalkboard lessons and digital lessons".

Similar views were evident in School Z's focus group interviews. Participants believed that their principal's digital leadership practices were passive in responding to their digital teaching needs which has negatively influenced digital teaching at that school; teachers' perceived that their digital teaching needs and wants in the classroom have not been fulfilled as pointed out by Respondent 1 (FGI3:L969) who stated: *"We just want Wi- Fi"*.

The principals' mindset also influences the development of a shared vision in schools as their way of thinking affects their relationship and interaction with others (Nadelson, Albritton, Couture, Green, Loyless, & Shaw, 2020). The creation of conducive conditions for the inclusion of all stakeholders in the formation of a shared vision depends on the principals' relationship and interaction with participants (Nadelson et al., 2020). Shared vision, the third sub-theme that was identified, is clarified next.

4.2.1.3 Shared vision

Principals' current digital leadership practices include establishing a shared vision with teachers and other stakeholders (Håkansson Lindqvist & Pettersson, 2018; Sheninger, 2014). In doing so, principals share the creation of the school vision with teachers in terms of the way digitals will enhance their teaching and learning (Jones, 2019) which includes teachers' roles in collegial learning within the school and networked digital environments (Downes, 2010; Siemens, 2005) towards the realisation of common goals (Leithwood & Seashore Louis, 2012).

The absence of a shared vision emerged from the data. In School X, Respondent 2 (FGI1:L1489) was vocal about the principal's digital leadership practices in leading digital age learning at that school, stating: *"I think the leadership of the principal of this school is that he has a vision, a wonderful vision but it does not include the staff"*.

In addition, the need for principals' digital leadership practices to foster shared vision in schools was passionately articulated by a respondent in School X (FGI1:L1356-1366) who stated: *"Also give us the opportunity to help. We have the knowledge … we have the knowledge in us, let us be digital leaders"* (Respondent 5). This respondent voiced her desire for teachers to be included as they had the knowledge to empower other staff members at that school

towards the realisation of digital age learning. Respondent 5 in School X continued to express her view (FGI1:L1376-1382) adding, *"To our colleagues who do not have the knowledge, give us the opportunity and I would gladly do training on digitals if somebody asked me or if I was given the opportunity, we are not given that opportunity".*

Further to this, it was evident from participants' responses in School X that the principal's digital leadership practices inadequately nurture collegial learning, an important part of shared vision in the digital age. Respondent 5 in School X (FGI1:L1394-1398) reported that: *"One management person is looked at as knowing everything about computers. That person is seen as the IT specialist, but it's not like that, we also know about computers".* Respondent 6 (FGI1:L1405) agreed with Respondent 5 in School X (nodding head in agreement) while adding: *"It all comes down to teamwork".* Respondent 2 (FGI1:L1489 -1497) in School X suggested that the principal's digital leadership practices did not include the staff in the school's shared vision, in the following statement: *"The principal of this school has a vision, a wonderful vision, but it does not include the staff".*

A somewhat similar picture of the principal's digital leadership practices, where teachers perceived that they were not part of the school's digital shared vision and ultimately change in that institution, emerged in School Z. A respondent indicated a disconnect between the vision of the leaders and the staff in terms of digital leadership practices that support change towards digital age learning. Respondent 5 (FGI3:L1078) stated: *"Our school leaders forget that we are the ones who implement whatever change that they sit and decide because when they decide something up there it's going to infiltrate to us".*

A shared vision inspires teachers towards the attainment of a school's collective goals (Sheninger, 2014). The data showed evidence that participants are not included in the schools' shared vision by their principals in School X and Z. Clearly the teachers' expectation to be included in the shared vision of these schools are not being met by the principals' digital leadership practices. If teachers perceive that they are not given the opportunity to be part of the shared vision, it will negatively affect their commitment to the shared accountability of the common goals (Msila, 2013).

The data also showed that teachers were not given opportunities to participate in collegial learning in their schools. Digital leadership leads collegial learning in a collaborative atmosphere where teachers teach and learn from each other (Aldawood, Alhejaili, Alabadi,

Alharbi, & Skinner, 2019) which is contrary to some of the respondents' views under this theme. In nurturing shared vision, principals also need to recognise and use the expertise of staff members to develop each other at their schools as part of their digital leadership practices. This view resonates strongly with that of Håkansson Lindqvist and Pettersson (2019) and Siemens (2005) who maintained that the digital leadership approach embraces openness in terms of where knowledge comes from; thus, in seeking to cultivate shared vision, the knowledge that teachers contribute cannot be overlooked. Principals' communication practices are important in embracing such openness and is the next sub theme that is discussed.

4.2.1.4 Principals' communication practices

Communication is defined as a dynamic, two-way interaction between all stakeholders in which information is exchanged in real time (Sheninger, 2014). Communication, an essential digital leadership practice of principals, is used for building a strong network of open communication (Sheninger, 2019). Data related to principals' digital leadership practices of communication include gaps in communication and closed communication which are the sub themes that will now be discussed.

4.2.1.4.1 Gaps in communication

In School X, communication gaps emerged between teachers and principals. Evidence from the data indicated that efficient communication at School X is not encouraged by the principal's digital leadership. In this school, Respondent 2 (FGI1:L442-450) spoke of a gap in communication between teachers, the principal, and the SMT in the school stating: *"I just feel is there is a big gap in communication between the leadership of the school and the educators"*. Respondent 6 concurred with Respondent 2's view (FGI1:L514) by affirming that there was a *"gap in communication"* with *"the school leadership"*.

In School Z, respondents (FGI3:L286-291) provided examples of gaps in communication between teachers and the principal with regards to the Wi-Fi at the school: *"We had Wi- Fi. It was taken away ... without notice the Wi-Fi was just cut off"* (Respondent 1) ...*"without any notice"* (Respondent 5).

These participants' responses in School X and Z indicated that they perceived that there were gaps in their principals' communication practices with them. Communication is a critical digital leadership practice that seeks to openly engage all stakeholders (Sheninger, 2019) in

decision making. The implication from the data was that the principals' digital leadership practice of communication was inadequate at these schools.

The data also pointed to the type of communication that principals were practicing at School X and Z which can be described as closed communication and is the next sub theme that is discussed.

4.2.1.4.2 Closed communication

There were instances in School X where teachers felt that their opinions had not been taken into consideration by the principal. Respondent 5 (FGI1:L2018-2020) emphatically stated that teachers want to be heard by the principal: *"Just listen to us. Listen to what we have to say as we are doing the groundwork"*. Respondent 4 in School X (FGI1:L1947-48) supported Respondent 5's statement by adding: *"I'd say the principal should include us in decisions, first of all he should ask me what do I want in the classroom"*. Respondent 1 (FGI1:L1761-1762) also indicated the need for open communication in School X and supported both Respondent 5 and 4 by claiming: *"The school will improve if the principal listens to 30 teachers' opinions"*.

In addition, another respondent in School X (FGI1:L1755-1759) also expressed teachers' desire for open communication with the principal, by suggesting: *"Give us a voice, yes give people a voice. Is it hard to give that to teachers … to just be given a voice"* (Respondent 6), while another respondent (FGI1:L1531) also indicated a similar wish: *"Looking forward to seeing the principal have that openness in communication"* (Respondent 2). The need for teachers to have open communication at School X was also articulated by another respondent (FGI1:L1469) who stated: *"There's no open platform for communication and hence if there was an open platform, we will achieve our goals"* (Respondent 4).

In School Z, Respondent 6 (FGI3:L163) pointed to their principal's closed communication practices with the staff by stating: *"I'm going to be honest. We have a bit of a communication problem with the principal and the SMT because they make decisions without consulting the teachers and we just hear about it, so communication is actually a big problem in this school"*. Respondent 5 (FGI3:L1078) in School Z agreed with Respondent 6 by adding: *"The principal and SMT forget that we are the ones who implement whatever changes they sit and decide because when they decide something up there it's going to infiltrate to us"*.

In Schools X and Z, the principals' communication practices were described by participants as closed as the data showed a one-way communication approach between the principal and the teachers at those schools. According to Sheninger (2019), principals' digital leadership practices advocate for a two-way communication approach that endorses open communication. Therefore, open communication at the two schools will be essential in establishing principals' effective digital leadership practices. Open communication is also important in professional development (Håkansson Lindqvist & Pettersson, 2019; Siemens, 2005), which is the last sub theme under principals' current leadership practices that will be now discussed.

4.2.1.5 Professional development

Professional development is an integral part of principals' digital leadership that seeks to improve teachers (Demski, 2012; Håkansson Lindqvist & Pettersson, 2018) and their own (Richardson, 2011; The Wallace Foundation Report, 2013) efficacy by engaging in and providing opportunities to build and extend digital knowledge and skills.

In School X, teachers were of the view that professional development opportunities were denied to them and this impeded their development. A respondent (FGI2:L513-515) in School Y elaborated: *"Not everybody on our staff knows how to use digitals but there are few that already know how to use them. I think those are the teachers who use digitals. However, we never got training on how to use the projector"* (Respondent 2).

In School X, teachers also felt that professional development opportunities provided by their principal did not consider their personal professional development needs. A respondent (FGI1:L1346) explained:

> *The principal is not actually improving on anything as we already know actually a lot more about digitals than the principal thinks we do. I feel that yes, we need to step up our training a lot and in terms of the training to be given. Most of the staff I think are quite clued up when it comes to using most digitals. We want a little bit of a higher level of training.* (Respondent 1)

Respondent 5 in the same school (FGI1:L1296-1309) had a similar view as Respondent 1, that professional development for teachers was insufficient and impersonal in that school, as is evident in the following quotation:

With regards to training, a few years back we all got laptops and everyone was excited about using a new laptop and then we were promised training and we got training but we didn't get training that was helpful. It was basics like how to make a folder on your computer. I also felt the training was lacking in a lot of ways because it was not something that we could use in class. A lot of us do have that knowledge on how to make a folder and how to do simple things. The principal and SMT should plan level one training, level two training, level three training but they just have this basic training where half the training was just people chatting. What I'm saying is that it wasn't effective training to use. I would love training, if someone would give me training on how to do Excel or use Excel properly or how to use Microsoft effectively. I know how to use Microsoft. I said I got a basic knowledge of Microsoft and I feel like we could use Microsoft so much for PowerPoints in our class, if we just got the training we needed. We are still constantly indicating in our IQMS Professional Growth Plan's that we want computer training.

In School Z, a respondent (FGI3:L206) reported that their principal did not have a clear direction for the development of teachers' digital competence at that school by stating:

I just like to commend the young teachers that are here. I have learnt how to use digitals from them and she (pointing to a respondent in the group) is the one who is always there to help me. if I can attest now, there are too many things that I'm doing on my own on my laptop because of her, even if it's Mathematics, she doesn't teach Mathematics but she takes me exactly to where I need to go and I will not forget what she has shown me. The thing is, the principal has this vision for digital teaching and learning, but he does not have a way to implement digitals. So, you have to implement it to your way. So, my implementation is to take Miss (name of respondent in the focus group) to be my digital mentor. She is my mentor and I'm so proud of her. I do everything in the technology because of her on these computers. (Respondent 5)

Although making no reference to the role of the principal in leading the professional development of teachers in School Y, one respondent at that school (FGI2:L650-656) simply expressed the need for training in the following reflection: *"I took it lightly that we need training on digitals to change. So this interview was more the eye opener for me. And to be*

honest, we do need training on digitals, and it will help us especially when it comes to implementing digitals" (Respondent 2).

The data also indicated that the respondents in School Y want customised and relevant professional development opportunities to be on par with other teachers as elaborated by a respondent in School Y (FGI2:L272-275): *"Digital leadership will encourage most of the learners, the parents, the teachers that we have in South Africa to compete globally with all other learners and teachers across the world"* (Respondent 5).

Apart from the professional development of teachers, the data also pointed to principals' professional development needs. In School X, evidence from the data revealed one respondent's (FGI1:L411-416) view of the principal in the following quotation: *"I think in terms of digital leadership, the principal is not so skilled"* (Respondent 4). This response suggested that the teacher viewed the principal as not having adequate skills for digital leadership. Respondent 4 (FGI1:L436-438) then proceeded to elaborate on his view: *"Whatever digital instruments are to be included in a classroom, before going ahead, the principal needs to be skilled on it to see if it does really work and see how does it work and then implement"*, which implied that the principal has to upgrade his digital skills.

In reference to professional development in the individual interviews with principals, P1 stressed that, *"all teachers and especially principals, have to go for constant training as far as digital technology is concerned"* and that *"not keeping abreast with digital technology will result in principals definitely not be able to run schools effectively"*. In addition, P2 and P3 alluded to the online learning platforms that they use such as "YouTube" to advance their own digital leadership practices.

Principals in the three schools did not adequately expand their digital leadership to include the provision of more supportive conditions for teachers' professional development (Domeny, 2017) and empowerment of teachers in their move to digital pedagogy (Aksal, 2015; Domeny, 2017).

Principals' professional development is an essential digital leadership practice (Sheninger, 2019). Principals "must understand the capacities of new digitals, have personal proficiency in their own use of digitals" and foster a digital age learning environment that inspires exploration of innovative teaching and learning methods (Domeny, 2017, p. 2). The data revealed the need for principals to engage in professional development. Professional development can empower

principals to meet the demands of a digital age learning environment, which is the next theme that surfaced in the data.

4.2.2 Digital age learning environment

Wheeler (2012) defined digital age learning environments as any set of technology-based methods that support digital age teaching and learning. The data revealed that there are structures at the three schools that try and promote digital age teaching and learning, which is the sub theme that is deliberated on next.

4.2.2.1 Digital age teaching and learning

The principal's digital leadership practices in School X have resulted in opportunities for digital age teaching and learning even though there are limited digital tools and resources at that school, as indicated by Respondent 1 (FGI1:L887): *"Even though the internet on some of the school's computers was a bit slow, but I guess when all the children were using it at the same time it will get a bit slow, we could go on Google and check pictures, show them whatever we needed to show them for the lesson. So it worked".*

Another respondent in School X (FGI1:L532-536) mentioned the use of Google Classroom for digital age teaching and learning at that school: *"We use Google Classroom because our students are always on their phones. They constantly on the phone, so if I the teacher posts homework on Google Classroom, it immediately pops up on their phone, it can remind them of the homework. I think Google Classroom is a good online platform to use"* (Respondent 5). Respondent 3 (FGI1:L603-604) validated the statement made by Respondent 5 above: *"I have all my students on Google Classroom I used it a lot. Reminders, work, everything, I used to do the Maths Hots questions with students on Google Classroom".*

In School Z respondents mentioned that School Z had limited digital tools which teachers have tried to use for supporting digital age teaching and learning such as (FGI3:L754): *"projectors"* (Respondent 4) and (FFGI3:L356): *"laptops"* (Respondent 2). Another respondent (FGI3:L756) reported: *"We've got interactive whiteboards, some classes not all of them"* (Respondent 2). Further to this Respondent 1 (FGI3:L277) explained her attempts at digital teaching and learning in School Z:

> *I'm all for digital age teaching and learning. I have a dongle (a portable Wi-Fi modem device used to access the internet) in my classroom which is my own so when we do a*

theme, I'll put a video on and live stream it out of my pocket. But how can we implement digital age teaching and learning if there are no digital resources for us to use in class. I teach digitally because I have my own internet, but the teacher next door doesn't have it. It is excellent but we don't have the digital infrastructure.

In School Z, a respondent reflected on her digital age teaching stating: (FGI3:L263): *"There's only internet at the office. I'm a Natural Sciences teacher and I download lots of Science material from the internet, videos from YouTube that explains Science much better to the children and I show them experiments that I can't do, they can see the experiments online"* (Respondent 6).

In School Y, Respondent 2 (FGI2:L481) reported on the kind of digital age teaching and learning taking place at that school, stating: *"We have very limited resources. Just having printouts from the internet is a luxury for us. If I do digital teaching, I use my tablet to show students something that I am teaching them, or I will make the images bigger on a laptop because teachers at our school do have a projector and tablets"*.

In their individual interviews, the principals also pointed to digital initiatives that they have initiated in their schools to foster digital age teaching and learning opportunities. P1 stated that teachers at that school have moved away from textbooks to *"Power Point to using the internet where educators can interact with different forms of media"* in the classroom. P1 also stated that *"every educator in the school was given a personal laptop"*. P2 mentioned that her school was a *"rural school"* with very limited digital resources, but then indicated that the *"rural development managed to donate 40 iPads for the learners"*. P3 indicated that, *"we don't have Wi-Fi in our classes"* and continued to explain that at his school, *"we have Wi-Fi in our admin block so the staff, they have access to it so they can download the YouTube videos or whatever they need, worksheets, etcetera"* which teachers use in the classrooms, so *"learners are involved, there's interaction taking place"*. P3 also noted that in his school, teachers *"mainly use the laptops and the projectors"* and further mentioned that *"we mainly have the white boards in the class with the projectors for the senior students"*.

The responses from teachers in all three schools highlighted the kind of digital initiatives at their schools that could create opportunities to support digital age teaching and learning. However, they noted that their schools have insufficient digital devices and resources for digital age teaching and learning to make this a reality. Consequently, some teachers took initiative

by using personal digital resources for digital age learning as indicated in the data. These perceptions of teachers place the spotlight on the principals' digital leadership practices as they are supposed to be innovative and unwavering in connecting and networking various stakeholders to acquire efficient digitals for digital age teaching and learning (Couros, 2015; Håkansson Lindqvist & Pettersson, 2018; Siemens, 2005). This is in line with policy initiatives in South Africa including the *National Professional Standards for Principals* that advocate a move towards re-envisioning principals' roles to include new responsibilities consistent with growing digital use and innovation in schools (SA DoBE, 2016b) and the NDP goals for digitals in education (National Planning Commission, 2012).

Moreover, the findings at the three schools regarding existing digital initiatives bear resemblance to observations made by Kilfoil (2015) in Chapter Two (see Section 2.3.1), who described schools in South Africa as concentrating on technical and superficial use of digitals rather than deep digital pedagogical practices. Digital age learning environments are characterised by deep digital pedagogical learning practices (Eady & Lockyer, 2013). Leading digital age learning environments is premised on the notion that principals need to purposefully provide opportunities for students to learn in digital spaces through digital tools (Demski, 2012; Sheninger, 2014). Principals in Gauteng West can cultivate and enable digital age learning environments through behaviours that prioritise digital tools for learning in digital spaces (Ahlquist, 2016; Eady & Lockyer 2013; Sheninger, 2019).

Digital school culture also supports digital age teaching and learning which is the next theme explored from the data.

4.2.3 Digital school culture

I did not review digital school culture in Chapter Two since it was not within the scope of this study to survey the extensive nature and far-reaching impact of digitals on school cultures. I thus include under this theme literature on digital school culture as it emerged in the data, which helped inform and interpret the data on this theme. School culture in the digital age provides a new perspective on schooling focused on engagement and achievement (Sheninger, 2019). In cultivating a digital school culture, principals' digital leadership practices include connections and collaborations with all stakeholders to ensure innovation in schools and the demonstration and promotion of effective digital use (Mantick, 2019; Sheninger, 2019). In a digital culture,

principals aspire to provide access to tools that foster digital skills, celebrate success, support innovation, and inspire students to achieve (Domeny, 2017).

The data showed that principals' digital leadership practices at the three schools had begun to encourage and facilitate the initial growth of a digital school culture. Three sub themes were identified under the theme of digital school culture namely: social media applications; paperless schools; and branding and public relations. Each one will be examined commencing with social media applications.

4.2.3.1 Social media applications

Social media applications are electronic forms of communication "through which users create online communities to share information, ideas, personal messages, and other content" (Powers & Green, 2016, p. 135). The data indicated that in all three schools, principals' digital leadership practices included the use of social media applications such as Facebook and WhatsApp for digital connections with stakeholders that is in line with a digital school culture (Sheninger, 2014). Data related to social media applications included usage and challenges which are the sub themes that will be now be presented and discussed.

4.2.3.1.1 Social media applications usage

In School X, Respondent 5 (FGI1:L123-124) acknowledged the use of social media applications by the principal at that school: *"We have a school WhatsApp group where the principal gives us important information"*. Later on in the interview the same respondent indicated the purpose of social media platforms in that school (FGI1:L824-835) by stating: *"With regards to digital communication, we have HODs sending us pictures of the memorandums and giving us notices on WhatsApp. We all have our own subject department WhatsApp groups, our HOD will remind us that there's a meeting that afternoon or that we have to go for a CIF meeting"* (Respondent 5).

In School Y, Respondent 9 noted the various uses of social media at that school (FGI2:L211-217) by revealing that:

> *There's also the school's WhatsApp group. Even though I'm not on that group I know it exists. When the principal wants to notify us of anything like memorandums or circulars she will send those on that group then we will know that we have for instance*

a workshop or if it's notices for the Grade R's then they will be reminded through that WhatsApp group that there's a workshop that they have to go to.

Respondent 9 in School Y (FGI2:L224) also mentioned that the school has a *"Facebook page"*. According to Respondent 9 (FGI2:L237) the school uses Facebook to highlight their positives: *"We will post a video or the pictures of the choir's achievement"*. Respondent 9's (FGI2:L242-243) additional response to being asked the purpose of posting on Facebook was: *"I believe for parents to know what's happening at the school"*.

In School Z, Respondents 4 and 1 (FGI3:L39-44) noted that the principal communicated with them through a WhatsApp group. Respondent 2 (FGI3:L75-76) confirmed the use of WhatsApp at the school stating: *"Can I just add to that as far as I know, the junior phases have a WhatsApp group, the senior phase has a WhatsApp group and I'm sure the SGB has a WhatsApp group"*. Respondent 2 (FGI3:L80-83) further elaborated on her comment: *"The SGB also has a WhatsApp group so they communicate through that but with the WhatsApp group, when we have a problem with a parent or a child, we don't send the child's name on the group we'll obviously send a message privately to the parent"*.

Respondent 2's (FGI3:L122) answer to the school's use of social media was:

The principal doesn't physically do the Facebook posting. We have two staff members that work on Facebook. So we try to update it frequently but because we are so busy at the moment, it's not fully functional, but if there is anything important the principal will WhatsApp the teacher or leave a note and say, please put this on Facebook or please remember to invite the parents or notify the parents on Facebook so if the parents don't have WhatsApp they can always just go on to Facebook.

Later on in the interview, Respondent 2 in School Z (FGI3:L171) stated her personal view on the purpose of posting on Facebook at that school:

I think we would like to promote our school because we have to be proud of your school but also, I think it's for the parents. We have a lot of parents that work dayshift or nightshift. So, if a school event is on a Saturday and a parent worked night shift on that Friday, the parent is not going to be at school to come and watch her little one run or whatever the case might be. It was nice to put posts of school events on

> *Facebook for the parents to see the school's activities such as the netball the girls did or the soccer trials but now with the new school regulation regarding posts of students on social media, we are actually stuck in the sense that we can't really post pictures of students anymore.*

In the individual interview with principals, P2 admitted that digital leadership had made *"work so easy"* in terms of communication with various stakeholders through *"WhatsApp"* and P3 mentioned that the use of *"digital tools for communication"* such as the *"D6 communicator"* app and social media platforms like the school's *"Facebook page"* had made his digital leadership practices more effective.

The data revealed that social media applications are being used by principals as part of their digital leadership for various purposes on a relatively small scale in the three schools namely by digital communication and information sharing, distributing documents, and posting school achievements on digital platforms (Sheninger, 2014) which was confirmed by the document analysis of posts in School X's website and School Y and Z's Facebook profiles. The data also revealed that one principal delegated social media responsibilities to two staff members due to a busy schedule. Digital leaders employ social media applications as a natural part of their leadership (Couros, 2015) therefore, optimal and more varied use of social media on a grander scale can provide principals with expanded digital opportunities to nurture collaboration, prioritise relationships, and partnerships in a digital school culture (Siemens, 2005; Sheninger, 2014). The benefits of social media applications in a digital school culture are not without challenges as indicated by the data, which will be deliberated on next.

4.2.3.1.2 Challenges to social media applications

Evidence from the data indicated that there are challenges in the use of social media applications. In School X, a respondent (FGI1:L1648-1653) reflected on the challenges of teachers posting on social media platforms by citing a recent story that made headline news in South Africa, resulting in that teacher being dismissed: *"Let's just think about the teacher that put pictures on Facebook of the children in groups on the first day to make them feel welcome. … What happened? It became a racist thing"* (Respondent 2). The same respondent (FGI1:L1657-1663) continued to add to her reflection, affirming that teachers were not supported by the principal when their social media posts were misconstrued:

> *Let's say a similar incident happened to a teacher, which is possible, the teacher will be the scapegoat. Your school will not support you if you are in trouble with parents and the community for posting similar pictures of students, your school will make you stand alone. There won't be that school that's going to stand with you and go through the situation with you.* (Respondent 2)

Another respondent in the same school also pointed out challenges linked to teachers posting on social media (FGI1:L1667-1670) remarking that:

> *On that note if a teacher posts a picture of students activities on sports day at school, then maybe one of the parents will see that you put up their child's picture on social media and report that they didn't want their child's picture to be on social media, then the parents complain to management and it becomes a big problem.* (Respondent 3)

Respondents in School X (FGI1:L1684-1687) also reported observations of how WhatsApp platforms were being used in that school:

> *In terms of the principal and the staff, I don't know for sure but I don't think Grade four to seven teachers are allowed WhatsApp groups. In the school's WhatsApp announcements groups, only the group admins which is the principal and SMT can send messages so there's no way that I can reply or send a message if I wanted to say something.* (Respondent 4)

Respondent 5 (FGI1:L1699-1700) offered a possible explanation for Respondent 4's observation: *"I would say maybe to a certain extent people were using the school's WhatsApp announcements group for personal messages and our group admin which is our management wanted it only for professional use"*. Respondent 5 (FGI1:L1704-1720) then proceeded to provide an example of how their principal responds to messages on the school's WhatsApp group:

> *If there is a staff meeting notice and we send a thumbs up sign on the school's WhatsApp announcements group, we get scolded by the principal for putting a thumbs up sign on the group. A thumbs up sign is like a signature that indicates we received the message for us digital people. When we put a thumbs up it means okay, I got the message and I'm going to see you at two-thirty as there's a meeting. We get shut off*

because we put thumbs up in groups. School WhatsApp groups should be open and not only have the group admins function in place.

Further remarks about social media included expectations by teachers to avoid miscommunication on these platforms as a respondent (FGI1:L1746-1749) passionately remarked: *"The principal must give us the rules for the WhatsApp school group and tell us what we can and cannot do and we will abide by all the rules. Make us a part of the group because we also want to be not just in but part of the group"* (Respondent 5).

In School Y, a respondent (FGI2:L300-309) shared her views on the challenges associated with social media applications, stating that:

> *It is nice to have social media platforms available anytime you need it, but it has also a lot of problems that comes with it. Recently we have not posted a lot of things because the challenge is we need consent from parents to post the child but now when the children are posting, they don't need consent from me to post pictures, they just post. Students post everything on social media even between themselves and everything is posted everywhere.* (Respondent 2)

Another respondent (FGI2:L341-349) agreed with Respondent 2 adding: *"Students don't think before doing anything. They just do it then after posting on social media, they recall that they shouldn't have posted because it cannot be erased"* (Respondent 4).

Respondents in School Z had similar views to those in Schools X and Y on the challenges of posting on social media applications. In School Z, respondent 2 (FGI3:L147) stated:

> *Actually, we started Facebook not to communicate with the parents but to post school activities like today's fun day that we are having at school. So it was for us to post pictures of fun days or sports or honours assembly so people can see that our children are doing well that so we can promote the children but now with a new rule coming out that you're not allowed to take photos of children and post them on social media without parent's consent, it is more difficult to do that because obviously if you take a group photo of a child and a mum in that group tells you my child's picture is not allowed to be posted on social media. It makes it more difficult for us to post. I'm in the senior phase and she's (looking at one of the respondents in the focus group) in*

the junior phase so if I put up a picture of let's say juniors and seniors together and her student's mum says my child's picture is not allowed to be posted on social media, it makes it more difficult at this stage to post on social media.

Evidence from the data showed numerous challenges associated with the use of social media applications. Some of the key challenges emerging from the data include misconstruing posts on social media, limited support from the principal for teachers' posts on social media, parental consent for posting school achievements of the children on social media, creation of 'admins only' WhatsApp groups to restrict communication, personal and inappropriate posting on official social media platforms, principals' response to teachers' messages on school social media platforms, rules for using social media, students posting content without consent, and the risks of posting on social media.

Digital leaders need an innovator's mindset (Couros, 2015) to proactively deal with problems related to social media (Vasek & Hendricks, 2016). According to Vasek and Hendricks (2016) principals' digital leadership practices need to ensure that acceptable use of social media in school policies is clear and well-articulated to all stakeholders to prevent and address challenges. This is supported by the data as P2, in offering his perspective on the matter, stated that there should be *"norms and standards"* for digital use and that teachers and learners should be *"taught when and how"* to use digitals.

Social media applications are important in a digital school culture (Couros, 2015) and are associated with paperless schools, the next sub theme discussed.

*4.2.3.*1.*3 Paperless schools*

Digital school culture advocates for paperless schools where apps and software replace pen and paper documents (Garland & Tadeja, 2013). In all three schools, respondents believed their school principals were beginning to embrace the notion of going paperless in their schools. One respondent in School X (FGI1:L79) reflected: *"I would say the principal is efficient on technology, meaning the school is moving towards everything being electronic"* (Respondent 6).

Another respondent in the same school agreed with Respondent 6 that their school was moving towards being a paperless school (FGI1:L18-23) by mentioning examples of documents that have become digital: *"For example the biometric system of signing in and signing out and then*

we have our email and then notices to parents are through SMSs and on our school website" (Respondent 5).

A respondent (FGI2:L429-437) in School Y also expressed a move towards going paperless as well as the positive impact it has had, stating:

> *We do get most of the notices digitally of what is happening in different schools, neighbouring schools, in our district and in our province while just sitting here in the school or in our classrooms, we just get immediate information so there's a lot of improvement. Gone are those days where we would wait for maybe a letter or a fax to come through, with digital leadership there is quite an improvement, we get immediate feedback in most cases as to how other schools are performing in terms of the results per term; it comes immediately we don't have to wait for a week or two weeks to get it so there's quite a improvement.* (Respondent 5)

Respondents in School Z also affirmed a move towards a paperless school as one of the respondents (FGI3:L653) explained:

> *The paper trail for some of the communication has gotten less so as Mrs (name of a respondent in the focus group) said so instead of printing the memo for the whole school if she's part of netball and I'm part of netball, he (in reference to the principal) only emails it to us. I'm the only technology teacher, the whole Intersen phase does not have get my memo, he (in reference to the principal) emails the relevant notices to the relevant people in that way the school has saved on paper*. (Respondent 2)

From the data, it was evident that the three schools are moving towards being paperless schools. This was confirmed by document analysis as School X's public website contained posts of newsletters, timetables, school calendar, announcements, and school news. School Y and Z's Facebook profiles had posts on parent notices and school news.

In the individual interviews with principals, P2 indicated her desire to *"be paperless"* but due to lack of equipment the school *"can't ... in future, once we have the proper structure and the proper equipment, we will be able to do that"*, which provided some insight into a possible reason for the slow transition to a paperless school.

The data showed a gradual shift to paperless schools, which may be attributed to principals' changing leadership practices (Uğur & Koç, 2019) that are suited to a digital school culture. These practices are in line with the *South African Standards for Principals* (SA DoE, 2016b) that tasks principals to digitally lead their schools and ultimately modernise and digitise public schools for 21st century learning (Lesufi, 2014) in South Africa. Paperless schools are important in a digital school culture, as is branding and public relations, which is explored as the next sub theme.

4.2.3.1.4 Branding and public relations

In a digital school culture, digital leadership practices of branding which is a positive school presence through digital marketing (Sheninger & Rubin, 2017) and public relations which is the use of social media to share school stories (Aidman & Long, 2017; Sheninger, 2017) are essential.

The data revealed that structures to promote branding and public relations do exist at the three schools. However, there was limited deliberate digital leadership practices in the areas of branding and public relations at all three schools. In School X, a respondent (FGI1:L777-783) indicated that some form of branding and public relations takes place at that school, as is apparent in the following quotation: *"On that note about digitals there are educators, who obviously when we have school functions, want to have their photos taken. Respondent five uploads all those photos of educators onto the School's website as well as whatever else happens in the school"* (Respondent 6). This response suggested that despite the challenges mentioned by participants under the social media applications theme, some branding and public relations continues in that school.

The respondents in School X were more enthusiastic about branding and public relations initiatives in the public school next door, than in their own school. A respondent (FGI1:L1544-1555) in School X commented on the neighbouring school's Instagram account by stating:

> *They are constantly updating people on Instagram on what their school is doing, they have got videos, it is such an interactive space. Ex-previous students can even follow what their school is doing, they are using digital platforms to communicate such important messages that people might even want to enrol their children into that school.* (Respondent 5)

Another respondent added to the remarks made by Respondent 5 (FGI1:L1564): *"I also follow them on Instagram because it's my ex-school and they are very interactive. What I like is that they use Instagram, it's a digital platform that is in so many ways positive like team building, I mean you feel like a part of that school you want to be part of the activities they advertise on their Instagram page"* (Respondent 1). Although these responses referred to the neighbouring school, I included this data as it shed light on participants' perceptions of branding and public relations.

In School Z, a respondent (FGI3:L147) highlighted branding and public relations initiatives at School Z, explaining:

> *We started Facebook not to communicate with the parents but to post school activities like today's fun day that we are having at school. So it was for us to post pictures of fun days or sports or honours assembly so people can see that our children are doing well so that we can promote the children.*

Indications of branding and public relations was evident in the document analysis of School X's website and School Y and Z's Facebook profiles posts. Although there were no visible advertisements that marketed any of the three schools in these public platforms, posts did include stories about school positives such as students' achievements and school activities.

Branding and public relations are significant digital leadership practices and are about principals becoming a storyteller-in-chief using free digital tools to create a positive brand that resonates with all stakeholders (Sheninger, 2019). Gauteng principals can extend their branding and public relations practices through existing platforms in their schools such as their website and Facebook.

Such initiatives by the principals will be met with challenges to their digital leadership, which is the next theme that emerged in the data.

4.2.4 Challenges to digital leadership

Seven sub themes were identified under the theme of challenges to digital leadership namely: digital tools and resources, the digital divide, cyberbullying, teacher motivation, teacher readiness, principal readiness, and school readiness which is discussed below.

4.2.4.1 Digital tools and resources

The data revealed that a challenge to digital leadership in School X was the availability, access, and security of digital tools and resources.

Respondent 6 (FGI1:L220) at that school stated: *"Some teachers haven't got access to Internet".* Another respondent in School X spoke about the challenges relating to digital tools and resources in the different classes (FGI1:L395-402) stating: *"The problem is that now when I'm designing my lessons I'm designing a digital lesson for 6A and then comes 6 B, C and D and I'm still on chalk. So now this is even though we are taking a step forward. For me, it's like actually double preparation because I have to prepare chalkboard lessons and digital lessons"* (Respondent 4).

A respondent in the same school (FGI1:L1078) noted the challenges of using digital tools in the class, declaring: *"So yes, we've got more projectors now but we using it less, I tried to use it in the second week this year and it was extremely time consuming to keep on resetting up the whole thing and each class is different. So now you have to figure out how to set up the mobile projector"* (Respondent 1).

In School Y, Respondent 2 (FGI2:L473-477) reported that *"the poor digital infrastructure of the school"* was the reason for the limited digital age teaching and learning taking place. Another respondent (FGI3:L756) in School Z revealed a disparity of digital resources in the different classes, maintaining: *"We've got the interactive whiteboards, some classes but not all of them"* (Respondent 2).

Respondent 1 (FGI1:L898-902) in School X, mentioned that digitals were stolen at that school and in school Z, Respondent 2 (FGI3:L765) and Respondent 4 (FGI3:L763) reported the theft of digitals at that school.

Challenges to digital leadership regarding the availability, access, and security of digital tools and resources are on the rise (Razzak, 2015). Schools are expected to employ digital age learning (Lesufi, 2014), however, the data indicated that the inadequate provision of digitals as well as security issues appear to hinder the fulfillment of this vision. If Gauteng principals are to lead digital age learning then the DBE and GDE must support them in the provision and safeguarding of digital tools as well as bridging the digital divide, which will be deliberated on next.

4.2.4.2 Digital divide

The data revealed that the digital divide was a significant challenge to digital leadership. The disparity between learners who had digital tools and access to the internet and those who did not, was a challenge for digital leadership. A respondent (FGI1:L608) in School X reflected: *"I used to post for students and they used to write it in their books from the Google classroom but the problem I had with that was not everyone in the class had access"* (Respondent 3). Another respondent (FGI1:L634) in School X added: *"Half of the class did not have a device and had no internet access"* (Respondent 3).

Respondent 2 (FGI1:L660-664) in the same school provided a description of the digital divide at that school by stating: *"This group of learners that has everything they need and then there's a group of learners that are really needy"* (Respondent 2) of digitals. Respondent 6 (FGI1:L1606) in School X added that students *"haven't got access to the internet, they haven't got a phone to actually communicate"*.

In School Z, a respondent (FGI3:L336) described the digital divide at that school in the following quotation:

> *The children that we have at the school and please don't get me wrong, we're not a poor school but we do have children that come from the rural areas. They do not have smart phones or they do not have the facilities to do work on internet. Let's say they have to do a research project, I have children whose parents don't even have a smartphone or they don't have access to any internet.* (Respondent 2)

Respondents in School Z (FGI3:L378) attempted to provide reasons for the digital divide, citing, *"lower income"* (Respondent 6). Another respondent (FGI3:L380) expanded on this statement by remarking that there are *"parents that that can afford digitals and you have the parents that can't afford it"* (Respondent 2). When questioned if the digital divide extended to the staff, Respondent 6 (FGI3:L386) in School Z, emphatically stated: *"The staff definitely"*.

In School Y, the digital divide was immediately communicated at the outset of the interview when a respondent (FGI2:L25) declared: *"Since we don't have a lot of technology in this school, so it's a bit hard for us to talk about it"* (Respondent 2).

In the individual interviews with principals, P3 spoke about the digital divide and indicated that sometimes the only time that students will see digital tools and resources will be in classrooms as many of the learners at his school *"don't have the exposure"* to digitals *"at home"*.

The data cited above illustrated that the digital divide among students, teachers, and parents is a barrier to digital leadership. The unequal access to digital tools and resources hinders principals and teachers from creating opportunities for students to learn in collaborative, digital spaces. Principals' digital leadership practices must be supported by the DBE and GDE to address the challenges of the digital divide.

Cyber risk, the next sub theme under challenges to digital leadership, will now be discussed.

4.2.4.3 Cyber risk

Cyber risk was revealed in the data as a challenge to digital leadership. A respondent (FGI3:L522- 538) described an incident at that school pertaining to cyber risk in the following quotation:

> *They share inappropriate pictures and also the messages. I don't think it is accidentally because the minute you go to the school's WhatsApp group, I'm just giving an example here, in the last three days we received an inappropriate picture of one of the students with their boyfriend on school's WhatsApp group and now, how did this happen and the person who did post that image did not even apologise because if they had accidently pressed the wrong button on their WhatsApp they could have deleted the picture and apologised, but the picture is still here, it's still on my phone.* (Respondent 5)

Digital leadership involves cyber conflict resolution and mediation between stakeholders (Ahlquist, 2014). The data showed that students are vulnerable to cyber risk, and South African principals can foster clarity of school rules and interventions for cyber risk to promote positive digital relations amongst all stakeholders (Kritzinger, 2017).

Teacher motivation, another sub theme identified under challenges to digital leadership, is discussed below.

4.2.4.4 Teacher motivation

A challenge to digital leadership is low teacher motivation which can significantly affect teaching and learning (Gadson, 2018). Teacher motivation is linked to principals' digital leadership practices (Sheninger, 2019).

The data revealed low teacher motivation at School X. When asked about what they would say to their principal about digital leadership, a respondent in School X (FGI1:L2072) reacted by stating that their principal should be *"talking to them"* (Respondent 3) about their digital teaching needs. Respondents 1 and 5 (FGI1:L2076-2078) expressed their demotivation by indicating that they felt that their knowledge, capabilities, and inputs regarding digital age teaching and learning were not acknowledged by the principal.

Respondent 4 (FGI1:L2070) in School X mentioned that motivation must *"come from the principal in terms of hearing what educators want, helping them, supporting them"*.

In School Z the respondents also articulated their demotivation. Respondent 1 (FGI3:L811) felt discouraged by the lack of provision for digital age learning: *"That one core ingredient is missing and that is we don't have access to the internet and Wi-Fi, if we had access we could use it. We have teachers who are more than willing to learn and to adapt to digital age learning and do it but we don't have access so our hands are cut off"*.

Another respondent (FGI3:L804) in School Z expressed unhappiness at having to foot the bill for internet usage in their classrooms: *"She uses her own dongle (*a portable Wi-Fi modem device used to access the internet*) to access the internet to use it in her class, Mrs (name of person) uses her own device. I hotspot from my phone to access the internet for use in my class and at the end of the month my account is sky high"* (Respondent 2).

Respondents in Schools X and Z expressed their discontent by indicating that the SMT in schools X and Z respectively, compounded the prevailing negativity. Respondent 5 (FGI1:L1394-1403) in School X elaborated: *"One management person is looked at as they know everything about computers. They are like an IT specialist but it's not like that, we also know about digital tools and digital usage. Give us the opportunity to be digital leaders"*.

Respondent 5 (FGI3:L1068) in School Z's focus group interview was of a similar view as Respondent 5 above in stating that teachers are perceived as *"not being able to think beyond or out of the box. The only people that know about digitals are those who are above us"*. In

School Y, teachers' demotivation though not directly mentioned, came across in the following statement by Respondent 2 (FGI2:L43): "*Availability of digital teaching tools is very limited to us as educators".*

Motivation can be defined as "to be moved to do something. A person who feels no impetus or inspiration to act is thus characterized as unmotivated, whereas someone who is energized or activated toward an end is considered motivated" (Saeed & Zyngier, 2012, p. 54). The data showed that the inadequate provision of digital tools and resources, teachers not being listened to, lack of teacher empowerment, the role of the principal in motivating teachers, limited opportunities for teachers to be digital leaders, and teachers feeling that their knowledge and capabilities are undervalued contributed to teachers' low motivation. Consequently, teachers' needs were perceived as not being met. If teachers perceive that they are undervalued or that their needs are not being met, it can negatively affect the quality of their teaching (Gadson, 2018).

The data also showed that teachers' low motivation was attributed to their desire to be digital leaders not being fulfilled by their principals. Principals can empower teachers by providing them with opportunities to be digital leaders (Domeny, 2017; Sheninger, 2019).

4.2.4.5 Teacher readiness

Another impediment to digital leadership among teachers that was conveyed during the focus group interviews was inadequate teacher readiness for digital age teaching and learning. A respondent in School Y (FGI2:L513) declared: *"Not everybody on our staff knows how to use digitals"* (Respondent 2).

Another respondent (FGI2:L590) in School Y stated: *"It is normal for us to have fear to use a laptop or to go to Google and do things"* (Respondent 5). In School Z, a respondent (FGI3:L386) revealed:

> *The staff especially the older as I say the older generation, are scared of technology and they don't want to be like the one teacher that resigned and went on pension because of this fear. That teacher bought a laptop and it was three or four years old but it's brand new, it looked as though she never set it up at all and she bought it so that she could use it in the class but she never did; the closest I saw her working with*

it was when she played a video for the concert so that the children could see the movements. (Respondent 6)

Teacher readiness refers to teachers' understanding and ease of use of digital applications, expectations, and behaviours towards their capacities and expertise for digital integration, as well as practical experience in the use of education technologies (Msila, 2015). Evidence in the data pointed to teachers' inadequate readiness in terms of knowledge and skills needed to use digitals and anxiety over the use of digitals, with one participant making specific reference to some teachers as being part of the older, less digital generation. In order to be ready to effectively integrate digitals into teaching and learning, teachers need to be provided with digital skills and knowledge (SA DoBE, 2017b). The effective integration of digitals into teaching and learning depends to a great extent on teacher readiness (Al-Awidi & Aldhafeeri, 2017). The DBE and GDE need to support principals' digital leadership practices in preparing teachers to overcome such challenges.

4.2.4.6 Principal readiness

The lack of principal readiness to lead digital age learning was cited as a barrier to digital leadership. A respondent (FGI1:L411) in School X claimed: *"In terms of digital leadership, the principal is not so skilled"* (Respondent 4). The data can be interpreted as the principal not being ready in terms of having the skills to effectively practice digital leadership.

When asked what they would say to their principal about digital leadership, Respondent 2 (FGI1:L1984-2001) in School X remarked: *"He wants to jump and I would tell him you have to do it step by step because you are not thinking every step over, you want to get to the end goal, you are not considering the steps in between, the method of reaching the goal I think is not there".* This implied that the respondent viewed the principal as not having the knowledge and skills for digital leadership thus putting the spotlight on principals' readiness.

I noted from the interviews with the principals that P1 and P3 cited their need to *"learn new skills"* to keep up with the digital trends in schools, consequently taking personal initiative to learn these skills from online platforms. I perceived that P2 and P3 conveyed their readiness indirectly through the challenges they faced regarding the use of digitals in their schools; nevertheless, I could sense the positive energy from them despite these challenges. I noted that P1 had considered principals' readiness in stating that, *"the manner in which principals will be*

appointed in future would be based on competency, the ability to use technology and understand technology".

The most effective way for principals to improve their digital leadership is to expand their digital knowledge and become competent and skilled users of digitals (Sheninger, 2019). The support from the South African education sector in preparing and equipping principals with the knowledge, skills, and an innovators' mindset to lead digital age learning through digital leadership practices, is crucial.

4.2.4.7 School readiness

Teachers perceived inadequate school readiness to be a challenge to digital leadership. When probed about the challenge of the school's digital infrastructure mentioned by respondents in School X, Respondent 5 (FGI1:L242) noted that it was *"quite a problem in our school. So, there's quite a gap there".* Respondent 1 (FGI1:L1234) elaborated on the digital infrastructure challenge at that school stating: *"At the moment with our classes, the infrastructure challenge would be not having the screens and the projectors that form part of the infrastructure".*

In School Y, Respondent 2 (FGI2:L25) stated: *"We don't have a lot of technology in this school".* In School Z, Respondent 1 (FGI3:L777) stated: *"We don't have the Wi-Fi infrastructure"*. Another respondent (FGI3:L971) in the same school claimed: *"At this stage I'm using my uncapped internet for schoolwork"* (Respondent 6).

School readiness can be described as "the state in which the organisational conditions are such that school staff are prepared to engage with change" (Lynch & Smith, 2016, p. 6). Evidence in the data showed that the limited digital infrastructure impedes school readiness for digital age teaching and learning and consequently was a barrier to digital leadership.

4.4 Chapter Summary

This chapter focused on the analysis and interpretation of the data collected from the qualitative investigations. Various themes and sub-themes were discussed with regards to teachers' perceptions and experiences of their principals' digital leadership in schools in Gauteng West. Findings from the document analysis and individual interviews with principals were integrated into the discussion.

The four themes explored were: principals' current digital leadership practices, digital age learning environment, digital school culture, and challenges to digital leadership. The first theme revealed that principals concentrated their digital usage on digitising administration and management, and that the provision of digitals for teaching and learning was very limited, and in some cases non-existent in their schools. This theme also revealed that principals' current digital leadership practices which were unoriginal, related to their conventional mindsets. Furthermore, it emerged from this theme that principals' current digital leadership practices failed to include teachers in the creation of a shared vision. This theme also revealed that there were communication gaps and inadequacies in their principals' current digital leadership practices, that their principals employed one-way and closed communication practices with teachers, and that professional development for teachers was inadequate and impersonal in their schools. Principals' professional development needs were also highlighted under this theme.

The digital age learning environment, the second theme discussed, found that in some schools, a slight shift to digital age teaching and learning had occurred but was hampered by inadequate resources and infrastructure, resulting in some teachers having to use their own resources in their classroom.

Digital school culture, the third theme that emerged from the data, found that social media applications were used in the three schools amidst various challenges; the three schools had begun to move towards being paperless and very limited digital leadership practices involving branding and public relations was apparent.

Challenges to digital leadership, the fourth theme, identified seven barriers to digital leadership namely, digital tools and resources, the digital divide, cyber risk, teacher motivation, teacher readiness, principal readiness, and school readiness.

In the next chapter I provide a synopsis of my research journey and describe what I learnt along the way. I also highlight my conclusions drawn from my findings that answer my research question and objectives, as well as offer recommendations for further research.

CHAPTER FIVE

LEARNING FROM MY RESEARCH JOURNEY

5.1 Introduction

Chapter Four presented the findings that addressed the three research objectives. In this chapter I first provide a synopsis of my research journey. Thereafter I present a full description of what I have learned from my research journey which includes addressing how the research objectives were met based on the data to answer to my research question: *What are teachers' perceptions of Gauteng public primary school principals' digital leadership practices for leading digital age learning in their schools?* Lastly, I propose some recommendations for future research and summarise the chapter.

The study revolved around three research objectives:

- To explore teachers' perspectives on their principals' digital leadership practices for digital age learning.
- To identify the support that teachers think is needed to enhance their principals' digital leadership.
- To identify what challenges teachers think pose a barrier to principals' digital leadership.

5.2 A Synopsis of my Research Journey

This section provides an overview of my research journey and includes a recap of the main and sub conclusions of each chapter. This study was born out of my deep interest in digital age learning which is supported by digital leadership (Sheninger, 2014; 2019). My interest was further peaked by the literature at the time and to date, which revealed that principals' digital leadership in digital age learning is a contemporary issue that has not been extensively researched across the education sector, particularly in South Africa.

Chapter One provided an orientation of my study indicating the growing pressure currently experienced by principals to transform their schools from traditional to digital age learning spaces to avoid becoming irrelevant in the digital age. Background information was provided

on the disillusionment with outdated traditional school leadership models to drive digital transformation which triggered a call for a paradigm shift among international educational researchers, leaders, reformers, and consultants (Couros, 2015; Hunt, 2015; Jameson, 2013; Mishra et al., 2016; Prensky, 2005; Richardson et al., 2013; Sheninger, 2014). A paradigm shift to robust digital practices, digital skills, digital behaviours, and digital activities that supersede leadership focused on mandated managerial roles in schools (Couros, 2015; Greaves et al., 2012; Hunt, 2015; Kemp, 2015; Prensky, 2005; Sheninger, 2014) was elaborated on. The background also provided information on the age of rapid digitisation and VUCA learning environments where digital leadership continues to attract attention as a relevant model for digital age learning (Couros, 2015; Kemp, 2015; Prensky, 2005; Sheninger, 2014). In light of this, my study sought to explore teachers' perceptions of their principals' practices of digital leadership in leading digital age learning in selected public primary schools in the Gauteng West district in South Africa. In seeking what is currently known about digital leadership, my study interrogated literature (Chapter Two) concerning important issues mentioned in subsequent paragraphs.

Chapter Two began with the development of a conceptual framework that provided the lens to explore teachers' perceptions of their principals' practices of digital leadership in Gauteng public primary schools. Through Kenneth Leithwood's transformational leadership theory and connectivism learning theory, I was able to explore how teachers perceived their principals' digital leadership practices. Kenneth Leithwood's transformational leadership theory revealed that the four core leadership practices and the educational context in which they operate in, are essential for successful leadership and ultimately student learning. The four core leadership practices were contextualised for principals' digital leadership practices in leading digital age learning (Håkansson Lindqvist & Pettersson, 2019). In this vein, the conceptual framework espoused that the four core leadership practices can provide an important source of direction for principals and a frame for emerging leadership development in digital educational contexts (Håkansson Lindqvist & Pettersson, 2019; Petersen, 2014).

The conceptual framework also explored connectivism learning theory in my study as the fifth dimension to the four core leadership practices. Connectivism supports digital leadership practices in digital age learning environments and advocates for opportunities to cultivate relationships focused on digital age learning through principals' digital leadership practices. As such, digital age learning can progress through principals' digital leadership practices. The

framework revealed that each of the four core leadership practices and connectivism provide vital dimensions in purposely building digital age school environments through activities that support principals' digital leadership by continually enhancing their capacity and capability to realise digital age learning even amidst challenges. Moreover, the conceptual framework espoused that digital leadership is about innovative, strategic, and robust practices and activities, and behaviours that provide impetus for digital age learning.

Thereafter, the survey of literature conducted revealed some of the limitations of traditional leadership models and interrogated the phenomena of digital leadership, examining principals' behaviours and activities that enabled digital leadership. Challenges and enabling conditions and opportunities for the establishment of digital leadership in schools were discussed. Some of the studies I examined established that maintaining the status quo of traditional learning environments hindered digital leadership from facilitating the inevitable evolution of digital age learning. The stronger the established traditional learning environment, the greater the reluctance to transform and the less likely it was that school leaders would engage in digital leadership. Digital leadership shapes digital age learning therefore a robust understanding, innovative vision of digital learning spaces together with strategic and progressive digital skills, and the ability to provide conditions to support such change is necessary if digital leadership is to be effectively integrated into schools. Such a transition will enable the transformation of the learning environment and advance the re-envisioning of leadership as digital behaviours and activities lead learning in schools rather than being a role that fulfils mandated functions (see Section 2.3).

Further to this, the literature suggested that digital leadership contributes to the development of PLNs through digital activities and behaviours that support and extend the growth of school leaders' digital leadership practices and digital skills for leading digital age learning. PLNs strengthen digital leadership which is premised on the belief that connected learning needs connected leadership for digital age learning, thus enabling all stakeholders to benefit from a *learning leader* to achieve the shared vision of a school (see Section 2.3.5).

The literature also suggested that digital leadership and the Batho Pele principles of public service delivery in South Africa are closely linked. Putting people first by improving the quality and relevance of education are key beliefs of both models. In addition, both digital leadership and the Batho Pele principles centre on the transformation of outdated behaviours and practices

to more relevant behaviours and practices that align with the real world such as learning in the digital age (see Section 2.5.2.3).

Moreover**,** the literature pointed to international and national professional standards for school leaders' digital leadership. These standards target system-wide change, helping school leaders to focus their digital leadership on transformative education practices and increasing innovation in their schools. In addition, at the heart of both digital leadership and international and national professional standards for school leaders is the potential of digitals to transform the leading of learning in the digital age (see Section 2.5.2.4).

In addition, the literature survey under challenges of digital leadership suggested that digital leadership practices were central to digital leadership. The increasing demands on principals for accountability of vast management responsibilities is a stumbling block towards the institutionalisation of digital leadership practices as it sustains school leaders' traditional practices. The emphasis on accountability of management responsibilities by governments and districts in schools (Alvoid & Black, 2014) is in conflict with digital leadership practices which advocate a shift to more innovative learning practices in schools (see Section 2.6).

Overall, the literature reviewed revealed that established leadership concepts are changing to establish new practices for leadership in a fast-moving digital world and that digital leadership is strongly associated with innovative digital pedagogy that supports such an emerging world.

Following the literature survey was Chapter Three. I contextualised the interpretivist paradigm in terms of its applicability to the qualitative research approach used in exploring the phenomenon of digital leadership (Chapter Four) in my study. A naturalistic approach was appropriate because my study sought to explore the teachers' perceptions of their principals' digital leadership practices in their schools. The research methods being focus group interviews, individual interviews and document analysis allowed me to acquire substantial evidence on teachers' perceptions of their principals' digital leadership. Moreover, within an interpretive paradigm I was able to construct knowledge through participants' descriptions of their intentions, beliefs, values, reasons, meaning making, and self-understanding (Creswell, 2014; Dean, 2018). The interpretive paradigm was suitable for my research because the goal was to explore, interpret, and seek to know teachers' perceptions of Gauteng principals' digital leadership practices in selected public primary schools. Principals' digital leadership practices that support digital age learning is a multifaceted endeavour.

In Chapter Four, the research findings were presented and discussed thematically based on the data generated through focus group interviews, individual interviews and documents reviewed. Purposive sampling of data was used. Various themes and sub themes emerged. The first theme, principals' current digital leadership practices was divided into five sub themes. The first sub theme, principals' digital use, revealed that principals focused their digital use on administration and management, whereas the provision of digitals for teaching and learning were very limited, and in some cases non-existent. The second sub theme revealed that principals' unoriginal current digital leadership practices were linked to their conventional mindsets. From the third sub theme, it emerged that principals' current digital leadership practices failed to include teachers in the creation of a shared vision. The fourth sub theme showed that there were communication gaps and inadequacies in the principals' current digital leadership practices and that these practices included one-way and closed communication in their schools. The fifth sub theme pointed to principals' current digital leadership practices providing inadequate and impersonal professional development for teachers. Principals' professional development needs were also highlighted under this theme.

The second theme discussed was digital age learning environment. It emerged from the sub theme, digital age teaching and learning, that the three schools were in the very early stages of shifting to digital age teaching and learning.

Digital school culture, the third theme that emerged from the data, found that social media applications were used in the three schools amidst various challenges; the three schools had begun to move towards being paperless and digital leadership practices involving limited branding and public relations were evident in some schools.

Challenges to digital leadership, the fourth theme, identified seven barriers to digital leadership namely, digital tools and resources, digital divide, cyber risk, teacher motivation, teacher readiness, principal readiness, and school readiness for digital leadership.

5.3 Learning from My Research Journey

My interactions with teachers and principals provided me with useful insights on digital leadership. The teachers' perceptions, experiences, beliefs, and attitudes regarding their principals' digital leadership practices helped me to develop a better understanding of their principals' intentions, if any, to promote digital age learning. In this section, I discuss the findings generated in my study in relation to my research objectives. The conceptual

framework used to conceptualise these findings was based on Leithwood's transformational leadership theory contextualised for the digital age (Håkansson Lindqvist & Pettersson, 2019) and connectivism learning theory (Siemens, 2005). I also draw on my data analysis and the literature examined in Chapter Two to conceptualise my findings.

5.3.1 Research objective one

The findings discussed below are aimed at addressing the study's first research objective: to explore teachers' perspectives on their principal's current digital leadership practices for digital age learning.

5.3.1.1 Principals' digital use

Emerging from the findings were teachers' perceptions of their principals' current digital leadership practices which were viewed as being in the very early stages of development at the three schools. The institutionalisation of digital leadership was seen by teachers as being firstly through digital use in administration and management. Teachers agreed that their principals' showed some digital leadership in their digitising administrative and management tasks which improved the daily running of their schools. Such perceptions of digital leadership practices are not off the mark and concur with traits of digital leadership described by Håkansson Lindqvist and Pettersson (2019) who prescribed that administrative and managerial tasks be digitised to improve efficacy in digital age learning environments. These findings implied that the digitisation of some of these tasks are helping in a small way to pave the way towards a digital school environment which aligns well with the core leadership practice of *redesigning the organisation* in Leithwood's transformational leadership theory, where more efficient school organisation can be achieved through digital tools in the digital age (Håkansson Lindqvist & Pettersson, 2019).

Secondly, although teachers understood the institutionalisation of digital leadership as being the provision of digital tools and resources for digital age teaching and learning, they noted that in their schools, such provisions were basic and insufficient. As indicated in the literature, these findings are in line with the current dispensation of digital leadership which calls for the provision of digital tools and resources (Ahlquist, 2016; Demski, 2012; Sheninger, 2019; Zhong, 2016) and the core leadership practice of *redesigning the organisation* (Håkansson Lindqvist & Pettersson, 2019) but also highlight the challenges of limited digital tools and resources in schools (Razzak, 2015; Yuen, 2015). This finding was a cause for concern because

the very digital tools and resources that facilitate digital age learning environments were limited and thus the institutionalisation of digital leadership could not be completely realised.

The findings also revealed that deep digital pedagogy was absent in the schools. The literature reviewed on digital age learning focused on engaging and critical digital pedagogy (Eady & Lockyer 2013; Lodge et al., 2020) and the core leadership practice of *managing the teaching and learning programme* in Leithwood's transformational leadership theory where a shift from technical and shallow digital use to more deep, interactive pedagogy (Håkansson Lindqvist & Pettersson, 2019; Kirk & Pitches, 2013) is highlighted. It can thus be argued that the absence of deep digital pedagogy demonstrated that the majority of the participants merely scratched the surface of the depth of digital leadership, depicting a narrow understanding of digitalisation and a paucity of digital leadership for a digital age learning environment.

The principals' digital leadership practices as evidenced in the findings were basic and emergent and seemed focused on management and administrative processes. Provisions of digitals for digital classroom practices were either absent or very limited.

5.3.1.2 Principals' mindset

The findings showed that the teachers from the three schools perceived that their principals' unoriginal current digital leadership practices were associated with their conventional mind sets. Consequently, the ideals of learning in the digital age were marginalised. The findings also showed that these principals needed to adopt an innovator's mindset to inform their digital leadership practices (Couros, 2015) and to remain up to date with digital reforms in pedagogy to remain relevant in the education sector (Gilpin & Gustafson, 2015). Based on the findings, it can be argued that the tension between the principals' conventional and innovative mindsets need to be resolved to support learning in the digital age. The paradox of digital leadership lies in staying focused on the present, while also visualising the future and the path to reach it. Based on the literature, principals can use innovation and strategy as tools to bridge the gap between their conventional and innovative mindsets (Couros, 2015; McGonagill & Doerffer, 2011) to meet the complex and dynamic needs of both the present learning environment and the evolving digital age learning environment.

5.3.1.3 Shared vision

From the findings it emerged that teachers viewed their principals' current digital leadership practices as failing to include them in their schools' shared visions concerning innovative

digital age teaching and learning and collegial learning. Teachers admitted that they were not given the opportunity to give their input on digital age teaching and learning tools used at their schools nor were they given opportunities to participate in collegial learning based on their digital knowledge. The findings demonstrated that most of the respondents agreed that the lack of inclusion has had an adverse effect on them as they felt a sense of exclusion from the collective school goals. Most of the teachers correctly believed that digital leadership should entail a shared vision that includes all staff members. This finding is in line with the common position in transformational leadership theory. Leithwood and Seashore Louis (2012) and Håkansson Lindqvist and Pettersson (2019) encouraged principals' digital leadership practice of *setting direction* in respect of creating a shared vision to build a sense of commonality among staff members. Furthermore, their position maintained that the digital leadership approach embraces openness in terms of where knowledge comes from and thus the expertise that teachers have becomes part of the school's shared vision (Håkansson Lindqvist & Pettersson, 2019) which is in tandem with the ideals of connectivism (Siemens, 2005). Attaining mutual goals to digitally transform the school environment is essentially shared vision (Håkansson Lindqvist & Pettersson, 2019). From the findings it can be argued that if principals' digital leadership practices fostered a shared vision towards innovation, this would help meet the schools' contextual challenges in transitioning to digital age learning as teachers would feel included in the change process. This is particularly important in the South African context, as shared vision can illuminate the connection between digital leadership and the Batho Pele principles in schools, giving significant priority to all stakeholders, including teachers, by putting their need to be part of a changing learning environment first.

5.3.1.4 Principals' communication practices

The findings revealed that teachers perceived that there were communication gaps in their principals' current digital leadership practices at two of the three schools. Teachers expressed their discontent with the closed type of communication that involved principals' one-way communication with them in two of the three schools, with some admitting that their principals' communication practices were not transparent and as such needed to change. Thus it stands to reason that the schools need to build relationships consistent with the core leadership practice of *understanding and developing people* in transformational leadership theory based on transparency and good digitalisation conditions for teachers (Håkansson Lindqvist & Pettersson, 2019), shared experiences, and the values of connectivism (Siemens, 2005).

5.3.1.5 Professional development

It came across in the findings that teachers perceived their principals' current digital leadership practices of denying them customised and relevant professional development opportunities subsequently impeding their digital skills development. The majority of respondents supported the need and importance for both teachers' and principals' professional development to improve digital skills and competencies. This finding was significant as it is strongly supported in the literature on digital leadership. According to ISTE (2018) principals are tasked to empower teachers through professional development to enrich digital age teaching and learning, and Uğur and Koç (2019) maintained that principals' professional development in digitals is needed to promote digital learning environments. Similarly, Håkansson Lindqvist and Pettersson (2019) contended that in the core leadership practice of *understanding and developing people*, principals need to engage in professional development to improve their expertise to lead digital age learning environments. Principals also need to provide relevant professional development for teachers to enable them to effectively facilitate digital age learning as indicated in the core leadership practice of *managing the teaching and learning programme*. Further, Siemens (2005) maintained that connectivism learning theory fosters connected professional development to advance the digital proficiencies of teachers and principals. It was intriguing that teachers' perceived and understood digital leadership as strongly correlated with the professional development of both teachers and principals, not only as a preserve for school principals in a formal leadership position.

The findings also showed that some of the perceptions and expectations of the teachers were being frustrated by the reality in schools. Teachers were of the opinion that digital knowledge should not be vested in only certain individuals as outlined in connectivism learning theory (Siemens, 2005). However, the reality in their schools was that the majority of the teachers felt that their principals' digital leadership did not include opportunities for them to conduct professional development activities with colleagues based on their digital knowledge and expertise. Therefore, the emerging stance from the findings was that the teachers' perceptions and expectations of digital leadership that involved the provision of collegial learning opportunities may be on point. However, these expectations are in most instances unfulfilled by the manner in which digital leadership is practiced in the schools.

5.3.1.6 Digital age teaching and learning

The findings revealed that teachers had been implementing digital teaching and learning at a very basic level with limited insight and appreciation of its potential at the three schools. They were of the opinion that their schools had inadequate digital devices, resources, and infrastructure to successfully transform to a complete digital age learning environment. Moreover, the findings have clearly established that the teachers understood digital leadership as being instrumental in providing digitals for digital age teaching and learning and acknowledged this was not the case in their schools. These perceptions of the teachers related well to the four core leadership practices and connectivism on digital leadership which supports the notion that principals' digital leadership has to ensure favourable conditions for interactive and connected digital age teaching and learning and the availability of suitable digital tools and resources (Håkansson Lindqvist & Pettersson, 2019; Siemens, 2005).

Emerging from the findings was evidence that the limited digital tools available did facilitate an initial shift towards digital age learning at the three schools which problematised the reality of digital classroom tools and resources. This reality pointed to superficial digital pedagogy indicating that the digital age learning was not authentically evolving (Kilfoil, 2015). Based on the findings and consistent with connectivism learning theory, it can be argued that the crux of the matter is that if these principals are to meaningfully influence the evolving digital age learning environment at their schools, their digital leadership practices have to include mastering new forms of deep digital pedagogy themselves to improve teachers' instruction (Fullan, Hill & Rincón-Gallardo, 2017; Superville, 2019) and enhance deep digital pedagogy (Håkansson Lindqvist & Pettersson, 2019; Siemens, 2005).

5.3.1.7 Digital school culture - social media applications

The findings showed that teachers' viewed their principals' use of social media applications as varied but limited and on a small scale at the three schools. This finding suggested that their principals did not prioritise the use of social media in their digital leadership practices, which according to the literature is key to digital leadership communication practices (Sheninger, 2014). Couros (2015) also argued that the use of social media applications by principals should be a natural part of their digital leadership. Therefore, it can be reasoned that more diversified and optimal use of social media could provide principals with expanded digital opportunities to improve communication and nurture connections in a digital school culture (Siemens, 2005; Sheninger, 2014).

Further to this, evidence from the findings revealed challenges linked to social media application use. The main issues that arose from the findings were the misinterpretation of social media messages, minimal support from the principal for teachers' social media posts, parental approval for sharing children's school successes on social media, creation of social media groups that restricted interaction, and personal and improper information sharing on official social media platforms. The findings supported the need for principals' digital leadership practices to empower stakeholders (Håkansson Lindqvist & Pettersson, 2019) by proactively tackling social networking problems through transparent communication and effective mediation of school social media policies to all stakeholders (Vasek & Hendricks, 2016). This open communication would overcome these barriers in a digital school culture. However, it stands to reason that these activities are not getting the attention they deserve since social media use is currently underutilised at the three schools.

5.3.1.8 Digital school culture - branding and public relations

Teachers' perceived branding and public relations as limited and underutilised in schools according to the findings, which the literature maintained supports digital leadership in a digital school culture (Ahlquist, 2014; Sheninger & Rubin, 2017). Branding provides principals with opportunities to communicate the meaning behind their school brand and public relations facilitates the communication of school positives and narratives. I did not expect to find much evidence of branding, given that it is a relatively new concept in South African public schools, which was consistent with the findings in this study. However, the data revealed that teachers were enthusiastic about branding despite challenges and even shared stories of the positive impact of branding in a neighbouring school. Teachers also mentioned the use of social media for public relations in their schools. In addition, teachers were of the view that policies and parent objections against displaying visual images of their children made sharing school narratives and positives problematic. However, one principal (P2) stated that that teachers and learners should be taught the ethical use of digitals based on policies, which although restrictive, could serve the purpose of providing direction that protected all stakeholders in unpredictable digital age school cultures. The implication is that Gauteng principals can extend their branding and public relations as an important part of their digital leadership practices to market their schools and personalise their school narratives to establish a respected school brand (Sheninger, 2014; 2019).

5.3.1.9 Digital school culture - paperless schools

It emerged from the findings that teachers perceived that a gradual shift to a paperless school positively promoted a digital school culture at the three schools. Digital school culture was facilitated in the three schools by the principals' digital leadership making use of digital tools that saved time and money and enabled faster access to information. This perception is consistent with transformational leadership theory which supports the creation of paperless schools to improve digital leadership practices (Håkansson Lindqvist & Pettersson, 2019) that effectively foster digital school cultures. The creation of paperless schools to enhance digital leadership that can facilitate digital school cultures is consistent with expectations of principals in the South African education sector (SA DoE, 2016b) who are tasked to digitally lead their schools by transforming their schools into paperless, digital schools (Lesufi, 2014; SA DoE, 2016b). As such, principals need to employ strategic digital leadership behaviours that encourage their schools' progressive shift to a paperless, digital school culture.

5.3.2 Research objective two:

The findings discussed under the sub theme teacher motivation are aimed at addressing the study's second research objective: to identify the support teachers think is needed to enhance the principal's digital leadership.

5.3.2.1 Teacher motivation

Teachers believed that teacher motivation could support and enhance digital leadership. From the findings it can be argued that teachers felt that if their principals' digital leadership entailed valuing, empowering, and listening to them concerning digital age teaching and learning, they would be positively motivated.

Significant implications from the findings showed a lack of teacher agency and self-empowerment for personal motivation where digital age teaching was concerned and the dependence on the principal to 'take the lead' in motivating them. Further to this, some teachers wanted to exercise digital leadership, but the system constrained them. The school environment needs to support teachers' individual intrinsic motivation and digital leadership in a nurturing atmosphere which needs to be devoid of threats and embrace interactions that are emotionally supportive, responsive, and empowering among all stakeholders. The Batho Pele principles will be significant to digital leadership in fostering such an environment. One respondent significantly stated: *"If an educator is highly motivated, it changes every dynamic",* pointing

to the motivation of one of the greatest assets in a school, that of the teacher. Essentially, digital leadership is about putting the human being first (Batho Pele principles) which means prioritising the individual's digital needs as espoused in the literature through openness, transparency, and courtesy (DoE, 2013; 2017; Pietersen, 2014).

5.3.3 Research objective three:

The findings discussed under the sub themes of challenges to digital leadership are aimed at addressing the study's third research objective: to identify what challenges teachers think pose a barrier to principal's digital leadership.

5.3.3.1 Digital tools and resources

Teachers perceived problems of availability, access, and security of digital tools and digital resources in their schools to be a challenge to principals' digital leadership. A crucial observation was that despite these barriers, teachers were positive about how digital leadership could, if implemented correctly, facilitate digital age learning in their schools. Such positivity can be attributed to their frustrations with current teaching and learning, hence the leaning towards approaches such as digital leadership which offers pragmatic solutions to digital age learning which teachers want to see realised in their schools. Although this finding perpetuates hope, positivity alone is not enough to overcome such difficult challenges to digital leadership. Thus, based on the literature, it can be argued that stakeholders need to collectively support digital leadership in terms of availability, access, and security of digital tools and digital resources (Zhong, 2017). It can be reasoned that the DBE, a key stakeholder and steward of public schools in South Africa has a responsibility, in line with the Batho Pele principles, to provide their personnel (teachers and principals) and clients (students) with digital tools and resources to engage in digital teaching and learning to fulfill the digital vision and goals of the education sector. Further, digital leadership is a new construct of leadership in South African schools, thus its implementation requires a collaborative effort which is the dominant position in the literature (Couros, 2015; Zhong, 2017) not only from the DBE but across the education sector from GDE (provincial level) to Gauteng West (district level) to the school and local community. The responsibility to overcome the challenge of limited digital tools and resources therefore belongs to all stakeholders.

5.3.3.2 Digital divide

Teachers perceived the digital divide, which is the gap between students who have and have not got access to digitals and connectivity in schools, to be a challenge to principals' digital leadership (Yuen, 2015). The findings interestingly showed that despite the problems of the prominent digital divide in their schools, teachers were nevertheless enthusiastic about digital leadership as they perceived digitals to be the future of education in line with global trends and as such, teachers articulated that they did not want to be left behind. Teachers were not deterred by digital inequalities that challenged digital leadership as expected. The data may have been influenced by the age of many of the teachers who were young and may have held more robust perspectives of digitals.

5.3.3.3 Cyber risk

Teachers perceived cyber risk to students to be a challenge to digital leadership. Teachers' views of students being vulnerable and susceptible to cyber risk concurred with the views held by Kritzinger (2017) in the literature who stated that South African students are exposed to cyber risk and that South Africa has inadequate measures in place for school learners' cyber safety. This finding, a serious cause of concern regarding the online safety of students, resonated with the literature, where Ahlquist (2014) recognised the issue of cyber risk among students and thus advocated that principals' digital leadership includes the mediation of cyber dispute resolution to overcome this barrier. Based on the findings and the literature it can be argued that if principals' digital leadership clarifies school rules and interventions regarding cyber risk then positive, online digital relationships can be promoted (Kritzinger, 2017). However, the issue of online ethics and interactions need to be clearly addressed by the education sector in order to support principals' mediation of cyber risk.

5.3.3.4 Teacher readiness

Some teachers perceived the lack of teacher readiness to be a challenge to digital leadership, stating that anxiety about how to use digitals was a barrier. The disparities between young new teachers who wanted to innovate digitally and the older teachers who feared digitalisation was also proving to be a challenge to principal's digital leadership. This finding was consistent with the literature, as Al-Fudail and Mellar (2008) cited teachers' stress over digital use and Razzak (2015) cited problems with digital use and older and traditional teachers' refusal to integrate digitals as challenges to digital leadership. Principals' digital leadership practices will be

crucial in addressing these barriers and closing the gap between teachers who are comfortable with digitals and teachers who are less comfortable with digitals by creating a healthy, evolving digital work environment in which teachers are inspired and driven to be innovative (Mehdinezhad & Mansouri, 2016). DBE policies acknowledge the need to prepare teachers to improve teacher readiness for digital age learning (SA DoBE, 2017b) through existing training platforms such as the PLC, CPTD, and IQMS. Principals can empower teachers at school level through Internal School Improvement Plans (ISIP). ISIPs can inform teacher readiness as principals can use the ISIP process to present opportunities and activities for teachers' growth.

Besides training, giving teachers a voice in decision making and in the school's shared vision for digital age teaching and learning would also elevate teachers' readiness and their professional development would enable them to develop a sense of self efficacy.

The role of the education sector at all levels will be crucial in supporting principals' digital leadership practices in preparing teachers to overcome their readiness challenges.

5.3.3.5 Principal readiness

A few teachers perceived their principals' lack of readiness to be a challenge to digital leadership. Further, a principal in the individual interviews acknowledged the need for principals to be constantly trained as part of their personal professional learning to improve their readiness to lead digital age learning. As such, principals in Gauteng West can enable digital age learning by improving their own readiness and the support from the education sector will be critical to principals in this regard. Based on the literature, it can be argued that although digital leadership practices for principals are to an extent outlined in *The Standards for South African Principals* (SA DoBE, 2016b) the support from the education sector for the development of principals' abilities including their state of readiness for these digital leadership practices is unclear. Firstly, DBE policies regarding principals' learning point to insufficient support structures (Mestry, 2017). However, the nature of digital leadership in the literature is such that principals can, in a digital world, begin to transcend such challenging conditions (Couros, 2015). Opportunities for principals to take ownership of their learning through multiple platforms including PLNs is possible as seen in the literature survey in Chapter Two (see Section 2.3.5). I believe that as principals embrace innovative thinking (Couros, 2015) in seeking to learn beyond structures that are provided by the education department, their

readiness for digital leadership has the potential to grow in a personalised manner according to the context of their school.

5.3.3.6 School readiness

Teachers perceived that their schools' lack of readiness due to limited digital infrastructure was a challenge to digital leadership.

Based on the literature it can be argued that more funding for a total overhaul of digital infrastructures at these schools is needed to improve school readiness for the digital age. The OECD (2017) agreed that it may be necessary for education departments to assess current alignment of funding strategies to policy objectives and educational goals that effectively support education reform and develop effective funding allocation mechanisms necessary for digital age education.

Based on the literature, school readiness for digital age teaching and learning depends on multilevel system wide change (Meyer & Gent, 2016). If system wide readiness constrains change, even if change is espoused, it is unlikely that schools 'champing at the bit' to change through digital leadership practices will achieve much success. As such, a lack of change readiness in schools is one of the key learnings in my study. I agree with Meyer and Gent (2016) that strategic preparation for successful change to digital age environments through systematic assessments of schools' readiness for digital change alongside vision, policy, and planning, curriculum and content, pedagogy, change management, ICT readiness, ICTs, support, and maintenance is needed.

5.3.4 Concluding my research journey

The digital age ushered in by the fourth industrial revolution has put the spotlight on digital leadership as a prominent area of contemporary importance based on its appeal in schools. Principals are encouraged to embrace practices of digital leadership.

In concluding my research journey of exploring teachers' perceptions of their principals' digital leadership practices, it should be born in mind that:

"Change is the law of life and those who look only to the past or present are certain to miss the future" John F. Kennedy (1963)

The word '*change'* captures the essence of digital leadership that emerged from my study and as such offers principals an approach to change the way they lead their schools to meet the expectations of digital age learning.

5.4 Recommendations for Further Research

Empirical research in digital leadership is uncommon as it is a new and emerging area of study in education leadership and management both in South Africa and globally. Although some research into digital leadership has been conducted, as part of my learning in this research journey I recognised that there is further scope for research in digital leadership.

The following areas may be considered for future research into digital leadership:

- As my research has been restricted to a small geographical area with only 16 teachers from three schools and three principals within the Gauteng province participating in the study, a larger sample of Gauteng schools could be explored in more depth to allow for the generalisation of findings.
- My research found that teachers were articulate about wanting opportunities to be digital leaders. Teachers as digital leaders in schools is an important aspect worthy of empirical research.
- The ways in which system wide change readiness in education can support digital leadership is an area worth examining; for example, the identification of the future direction of learning in schools relevant for the digital age; identification of the necessary changes in organisational culture and processes within the education sector; identification of capable and innovative leaders across the education sector to direct such a change; and obtaining and aligning funding to achieve the aims of such transformation.
- Another fascinating direction for future research is exploring how differing schools' locations – urban versus rural – can affect attitudes toward digital leadership. Their unique situations and challenges can be examined and compared to each other. Finding differences and commonalities between them is important in the South African context as historical inequalities between them need to be redressed for significant progress to take place. Such an investigation could shed light on how schools in both urban and rural areas can equally be led into the digital age thus paving the way for all South African students, irrespective of location, to engage in digital age learning.

- District directors in South African schools have significant positional authority and influence because of the hierarchical structure of the education sector. Therefore, district directors are key figures in influencing change and innovation among principals in schools across their districts. The role of the district director in encouraging principals' digital leadership in South African schools is an interesting line of future research.

5.5 Chapter Summary

The aim of this study which was to explore teachers' perceptions of Gauteng public primary school principals' digital leadership practices for leading digital age learning in their schools has been achieved.

One of the key consequences that emerged from the findings was that digital use was focused on digitising administration and management resulting in a gradual move towards digital age management environments, but not enough of a move towards digital age learning environments.

The importance of an innovator's mind set, shared vision, open communication, and the need for professional development of teachers and principals for digital leadership in leading digital age learning were significant aspects that arose in this study.

The connection between digital leadership and the South African ideals of the Batho Pele principles highlighted in this study, reinforces the relevance of digital leadership in South African schools by putting the digital needs of teachers and learners first.

A noteworthy finding was that teachers were positive about the construct of digital leadership but demotivated by their principals limiting their input on digital learning and teaching changes in the classroom and school as a whole. This study revealed that availability, access, and security of digital tools and resources, digital divide, cyber risk, teacher readiness, principal readiness, and school readiness were immediate challenges that hindered digital leadership in the three schools in the Gauteng West district. Furthermore, this study showed that at present, digital leadership in schools needs multilevel system wide change readiness which has a fundamental role to play in establishing conducive conditions for the development of digital leadership.

The hope of this study is that is raises interest, awareness, and support among policy makers and school principals about the importance of digital leadership in the digital transformation of learning in schools.

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APPENDICES

Appendix 1: Approval of Research Proposal

UNIVERSITY OF JOHANNESBURG

MASTER'S SUMMARY PROPOSAL

The supervisor is requested to complete this form electronically

This form should be accompanied by the following documents as determined by the relevant approved departmental procedure:

1. The full masters proposal and/or chapter 1
2. Minutes of the meeting when the proposal was approved

Date:	27 AUGUST 2018
Student name:	JUDY DASRUTH
Student number:	2 0 0 6 2 2 6 5 3
Approved title: *Sentence case*	GAUTENG PRINCIPALS' PRACTICE OF DIGITAL LEADERSHIP
Degree:	MED
Date of first registration for the degree:	JANUARY 2017
Supervisor:	PROFESSOR CLIVE SMITH
Co-supervisor: *(if applicable)*:	PROFESSOR GEOFFREY LAUTENBACH

Aim and purpose of the study:

The aim of the study is to investigate Gauteng public primary school principals' practice of digital leadership in their schools.

The following objectives are intended to achieve the aim of the study:

- To investigate principals perspectives on their leadership practices for digital age learning. This will include their perspectives on the challenges and outcomes of their leadership for digital age learning.
- To explore teachers' perspectives on their principal's leadership practices for digital age learning
- To identify what support principals and teachers think is needed to enhance the principals' leadership for digital age learning.

Two/three sentences describing the focus of the study:

This research study focuses on how Gauteng school principals' lead digital age learning through digital leadership practices. School principals require new skills and practices to lead digital disruptions, complexity and digital age learning. If school principals can develop new skills to adapt to the new digital, disruptive school environments, they will play a significant role in leading learning in the digital age.

Two/three sentences describing the research design and methods:

Research design

A mixed methods sequential exploratory design strategy will be used to examine Gauteng

principals' practice of digital leadership in public primary schools. The data from the qualitative phase will be analysed to inform the quantitative phase to develop a survey instrument.

Research method

The two-phase approach of this study includes a general qualitative study in phase one to explore the phenomenon of digital leadership from selected teachers through focus group interviews as well as document analysis of relevant documents. In the second phase of the study, data will be collected through a survey instrument completed by principals.

Date of departmental approval:	
Reviewers (if applicable):	Dr Francois van As & Dr Jacqueline Batchelor

I, the supervisor, hereby declare that the proposal meets the following requirements:
a) A clearly identified, argued and substantiated research problem (using theoretical and contextual evidence)
b) Harmony of research design and research problem, aim(s) and/or purpose
c) A clear explanation and justification of the research design and methods

Signatures:

Student	Dasmith
Supervisor	
Co-supervisor *(if applicable)*	

FACULTY OF EDUCATION

DEPARTMENT OF EDUCATION LEADERSHIP AND MANAGEMENT

MEd PROPOSAL REVIEW

STUDENT AND SUPERVISOR(S) DETAILS

Student Name: Judy Dasruth

Student No.: 200622653

Title of Proposed Study: GAUTENG PRINCIPALS' PRACTICE OF DIGITAL LEADERSHIP

Minor dissertation		**Full Dissertation**	**X**

SUPERVISOR(S): 1. Clive Smith **2. Geoff Lautenbach**

E-mail address: csmith@uj.ac.za geoffl@uj.ac.za

REVIEWER DETAILS:

Title: Dr

Name: Francois van As

Institutional Affiliation: UJ

Dear Prof/Dr/Ms/Mr:

Thank you for agreeing to serve as a critical reader for the above MEd research proposal. Please submit your feedback on the attached proposal in relation to the review criteria that has been provided as soon as possible, but no later than 18 May 2018. The signed and dated feedback may be e-mailed to: Clive Smith at the following e-mail address: csmith@uj.ac.za

Indicate with a cross adjacent to one of the following options whether the proposal is:

1. Accepted un-amended
2. Accepted with minor/non-substantial changes **X**
3. Referred back for revision and resubmission
4. Rejected

REVIEW CRITERIA	GOOD	SATISFACTORY	UNACCEPTABLE	COMMENTS
Is the research problem clearly identified, argued and substantiated using theoretical and contextual evidence, culminating in the		✓		

statement of (a) research question(s)?				
Is the significance of the research problem clearly and convincingly explicated?		✓		
Is the research issue/problem relevant to current education theory and/or practice, intellectually rich and provocative?		✓		
Is there conceptual coherence between the aim/purpose and the research problem?		✓		
Do the objectives (if stated) reflect the aim/purpose, and does the aim/purpose of the research explicate what the researcher intends to do?			✓	There is only one main research question but four objectives for the study. It is recommended that there should be a sub-question for each objective.
Is the overall research design suitable for inquiring into the research problem?		✓		
Are the research methods sufficiently explained and are they theoretically and empirically justified?		✓		
Will the method/s of data collection capture sufficient, relevant data and will the proposed method/s of data analysis contribute to the reliability and validity (trustworthiness) of the study?		✓		

Does the reference list reflect adequate relevant and current research and does it accurately and consistently reflect an accepted referencing style, such as that of the APA?		✓		It is recommended that only those references referred to in the text should be listed in the reference list. A few references in the text are not listed. See comments made on proposal.
Has the proposal been language edited and proofread?		✓		Language use is good. There are a few technical errors.

Reviewer's signature: 

Date: 13-8-2018

Appendix 2: Ethics Clearance

NHREC Registration Number REC-110613-036

UNIVERSITY OF JOHANNESBURG

ETHICS CLEARANCE

Dear Judy Dasruth

Ethical Clearance Number: Sem 2 2018-010

GAUTENG PRINCIPALS' PRACTICE OF DIGITAL LEADERSHIP

Ethical clearance for this study is granted subject to the following conditions:

- If there are major revisions to the research proposal based on recommendations from the Faculty Higher Degrees Committee, a new application for ethical clearance must be submitted.
- If the research question changes significantly so as to alter the nature of the study, it remains the duty of the student to submit a new application.
- It remains the student's responsibility to ensure that all ethical forms and documents related to the research are kept in a safe and secure facility and are available on demand.
- Please quote the reference number above in all future communications and documents.

The Faculty of Education Research Ethics Committee has decided to

☒ Grant ethical clearance for the proposed research.
☐ Provisionally grant ethical clearance for the proposed research
☐ Recommend revision and resubmission of the ethical clearance documents

Sincerely,

Dr David Robinson
Chair: FACULTY OF EDUCATION RESEARCH ETHICS COMMITTEE
7 February 2019

Appendix 3: Approval – Gauteng Department of Education

1. *The District/Head Office Senior Manager/s concerned must be presented with a copy of this letter that would indicate that the said researcher/s has/have been granted permission from the Gauteng Department of Education to conduct the research study.*
2. *The District/Head Office Senior Manager/s must be approached separately, and in writing, for permission to involve District/Head Office Officials in the project.*
3. *A copy of this letter must be forwarded to the school principal and the chairperson of the School Governing Body (SGB) that would indicate that the researcher/s have been granted permission from the Gauteng Department of Education to conduct the research study.*
4. *A letter / document that outline the purpose of the research and the anticipated outcomes of such research must be made available to the principals, SGBs and District/Head Office Senior Managers of the schools and districts/offices concerned, respectively.*
5. *The Researcher will make every effort obtain the goodwill and co-operation of all the GDE officials, principals, and chairpersons of the SGBs, teachers and learners involved. Persons who offer their co-operation will not receive additional remuneration from the Department while those that opt not to participate will not be penalised in any way.*
6. *Research may only be conducted after school hours so that the normal school programme is not interrupted. The Principal (if at a school) and/or Director (if at a district/head office) must be consulted about an appropriate time when the researcher/s may carry out their research at the sites that they manage.*
7. *Research may only commence from the second week of February and must be concluded before the beginning of the last quarter of the academic year. If incomplete, an amended Research Approval letter may be requested to conduct research in the following year.*
8. *Items 6 and 7 will not apply to any research effort being undertaken on behalf of the GDE. Such research will have been commissioned and be paid for by the Gauteng Department of Education.*
9. *It is the researcher's responsibility to obtain written parental consent of all learners that are expected to participate in the study.*
10. *The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.*
11. *The names of the GDE officials, schools, principals, parents, teachers and learners that participate in the study may not appear in the research report without the written consent of each of these individuals and/or organisations.*
12. *On completion of the study the researcher/s must supply the Director: Knowledge Management & Research with one Hard Cover bound and an electronic copy of the research.*
13. *The researcher may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned.*
14. *Should the researcher have been involved with research at a school and/or a district/head office level, the Director concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.*

The Gauteng Department of Education wishes you well in this important undertaking and looks forward to examining the findings of your research study.

Kind regards

.....

Mr Gumani Enos Mukatuni
Acting CES: Education Research and Knowledge Management

DATE: 04/02/2019

Making education a societal priority

Office of the Director: Education Research and Knowledge Management
7th Floor, 17 Simmonds Street, Johannesburg, 2001
Tel: (011) 355 0488
Email: Faith.Tshabalala@gauteng.gov.za
Website: www.education.gpg.gov.za

Appendix 4: Permission from Principals

2019-02-10

ATTENTION: The Principal

The School Governing Body (SGB)

Dear Sirs/Madams

Re: Research for 2019

I am currently completing a master's degree at the University of Johannesburg in the field of Educational Management and Leadership. In 2019 I will be investigating Gauteng principals' leadership practices in three primary schools in the Gauteng West Region. The study will inform us about current digital leadership practices in South African schools for 21st Century learning. I am particularly interested in making a contribution to the field of management and leadership in the Gauteng West Region through this research.

Please be informed that I have received permission from the Gauteng Department of Education to conduct the research (refer attached document). I am requesting your permission (School Principal and SGB) to conduct the research. Please note that no names of the participating schools and teachers will be used since the university upholds strict ethical procedures. Furthermore, all information from participants will be treated with strict confidence. The research requirements are as follows:

Date:	**From 1 February 2019**
Research Method:	**Focus Group Interviews (6 teachers per group)**
Duration of Interviews:	**40 minutes per group**
Time:	**After teaching hours**
Participants:	**Post level one teachers preferably with 5 years of teaching experience**
Other requirements:	**Minutes of meetings 2018/19 (School Management Team Meetings, Head of Department Meetings, Staff Meetings)**
	School's website, school's social media platforms (if any)

DBE dashboard (Valistractor), SA SAMS (level of utilisation)

The findings of the research will also be made available to the school upon its completion. I will appreciate your school's participation in this research and look forward to working with you.

_____

Mrs J Dasruth

Researcher

The researcher, Mrs J Dasruth ***has been/has not been*** granted permission to conduct the above research.

_____ _____

Principal - SGB Member -

Please fax approval for research to **0114131337**.

Alternatively you can confirm via email (jdasruth@gmail.com) or telephonically (**0761784212**) and I will collect the written consent when I arrive to conduct the research.

Appendix 5: Letter of Consent

UNIVERSITY OF JOHANNESBURG: FACULTY OF EDUCATION

DEPARTMENT OF EDUCATIONAL MANAGEMENT

DEAR PARTICIPANT

LETTER OF CONSENT

I am a student at the University of Johannesburg completing a master's degree in Educational Management and Leadership. I am investigating Gauteng principals' practice of digital leadership in the Gauteng West Region and I am interested in the experiences and perceptions of teachers with regards to this style of leadership. This research will inform us about current digital leadership practices in Gauteng West for 21st century learning.

I, (Name of teacher) _____, understand the process of the research as explained to me by Judy Dasruth. I am willing to participate in this process, as I am willing to contribute to the field of leadership by sharing my experiences and perceptions.

The researcher has explained to me that every effort will be made to protect (guarantee) my confidentiality and privacy since no names will be used that will allow me to be identified. However, we are often identifiable through the stories we tell.

I understand that my participation is voluntary and at any time during the research process, should I wish to withdraw, I can do so without any penalty.

I agree to the research process being audio taped and transcribed. I understand that these tapes, records and materials are confidential and only the researchers will have access to the collected data. All research material will also be kept safe to ensure anonymity and will be destroyed after the research process has been completed to ensure this anonymity.

I understand that information obtained in the research process may be used for research purposes, presented anonymously at professional meetings and/or published in journals or

textbooks. At no time will my name or the name of the institution that I work for be used unless written consent has been given.

You may contact me at any time for additional information or if you have questions related to my findings of the study.

I AGREE TO PARTICIPATE IN THIS RESEARCH PROJECT.

PARTICIPANT'S SIGNATURE: _____

DATE: _____

PERSON OBTAINING REQUEST:

I have explained to the above-named individual the nature and purpose associated with participation in this research. I have answered any questions that have been raised.

RESEARCHER'S SIGNATURE: _____ DATE: _____

Mrs J Dasruth - 0761784212

Appendix 6: Interview Schedule

INTERVIEW SCHEDULE: FOCUS GROUP INTERVIEWS WITH TEACHERS

Opening: My Name is Judy Dasruth and I am a researcher. Thank you for participating in this research project. Every effort will be made to protect your confidentiality and privacy since no names will be used that will allow you to be identified. Please be comfortable and feel free to express your views. I will now proceed with the interview.

Technology or digitals. In this interview the word digitals instead of technology will be used.

1. **Please describe, from your own experience, the principal's leadership practices that encourage digital use at this school.**

2. **How does the leadership practices that you have described influence the day to day running of this school?**

3. **I would now like to tell you about digital leadership**

Digital leadership is about establishing relationships, influencing others and initiating change through the use of digitals. It requires a dynamic combination of mind set, behaviours and skills to change and/or improve the school's digital learning and teaching culture. Digital leadership connects leaders with staff, learners and other stakeholders through digital tools and social media platforms. Digital leadership allows for learning to take place beyond classroom walls in connected online spaces in order to facilitate digital age learning that is relevant for the 21st century.

What are your views about this concept of digital leadership?

4. How has the principal's digital leadership practices affected the

classroom's current digital environment/look.

5. There are two parts to the next question.

Firstly, what type of digital tools and/or platforms are provided to teachers to facilitate digital learning?

Secondly, how does the principal support teacher's digital challenges in the classroom?

Conclusion: Before we conclude is there anything else that you would like to add?

Thank you for your time and participation.

INTERVIEW SCHEDULE: INDIVIDUAL INTERVIEWS WITH PRINCIPALS

Opening: My Name is Judy Dasruth and I am a researcher. Thank you for participating in this research project. Every effort will be made to protect your confidentiality and privacy since no names will be used that will allow you to be identified. Please be comfortable and feel free to express your views. I will now proceed with the interview.

Technology or digitals. In this interview the word digitals instead of technology will be used.

1. **Please describe, your leadership practices that encourage digital use at this school.**

2. **How does your leadership practices, that you have described, influence the day to day running of this school?**

3. **I would now like to tell you about digital leadership**

Digital leadership is about establishing relationships, influencing others and initiating change through the use of digitals. It requires a dynamic combination of mind set, behaviours and skills to change and/or improve the school's digital learning and teaching culture. Digital leadership connects leaders with staff, learners and other stakeholders through digital tools and social media platforms. Digital leadership allows for learning to take place beyond classroom walls in connected online spaces in order to facilitate digital age learning that is relevant for the 21st century.

What are your views about this concept of digital leadership?

4. How has your digital leadership practices affected the

classroom's current digital environment/look.

5. There are two parts to the next question.

Firstly, what type of digital tools and/or platforms are provided to teachers to facilitate digital learning?

Secondly, how do you support teacher's digital challenges in the classroom?

Conclusion: Before we conclude is there anything else that you would like to add?

Thank you for your time and participation.

Appendix 7: Interview Transcripts

FOCUS GROUP INTERVIEW AT SCHOOL X

DATE: 2019-02-18

TIME: 14H15 – 15H15

PLACE: Classroom

I *My name is Judy Dasruth and I am a researcher. Thank you for participating in this research project. Every effort will be made to protect your confidentiality and privacy since no names will be used err... that will allow you to be identified please be comfortable and feel free to express your views. I will now proceed with the interview. In this interview the word technology and digitals will be used. Now although* b*oth the terms are closely related, technology focuses on the tools, the devices, the gadgets, the management systems, the products and processes that we use to simplify our daily lives whereas digitals focus on the*

behaviours and practices of humans that arise from the use of these t*echnologies so digital is more encompassing for the study that I'm doing.* O*kay please describe from your own experience, your principals leadership practices that encourage digital use in this school.*

(Silence)

I *Okay...in other words what does the principal do in the running of the school*

that show the use of digitals particularly in the areas of communication, assessment, SAMS and so forth.

R5 So for example like the biometric system signing in and signing out and then we have like mmm.

R1 Yah

R5 Our email oh and then notices to parents are through SMS's so on our school website.

I *Okay*

R5 Then we have err our marks.

R1 Our website as well.

R5 Our website yah then our mark… is our mark sheets also like something that we can

talk about…like err you know putting in our marks is digitally done our reports are also printed our registers are also done through that.

R1 SA SAMS… (inaudible) but that is...maybe not, was it also linked to SA SAMS.

I *Yes SA SAMs is also linked can...can you give me examples of how SA SAMS is used by the principal.*

R1 I know it's is used for err mmm the assessment err the mark sheets.

R5 Yah

R1 As well as the…

R3 Maybe for capturing err LTSM.

R1 Mmm (affirming)

R3 We do use it for LTSM.

I *Can you explain further about the LTSM.*

R3 like for example I'm in charge off the stockroom.

I *Right.*

R3 (continuing) so we…we do a stocktake and whatever stock is used or whatever stock I have left we capture it on SAMS so that at the end of the year we know how much stock is left and how much stock has been taken out.

I *Okay*

R3 (continuing) by filling it in on SASAMS so.

I *So are these practices initiated by the principal?*

R3 Yah

I *Okay, anybody else, yes…*

R5 So we got also distribution forms giving out the textbooks is also done through SA

SAMS, so that's also a way of like monitoring the textbooks how many are lost, and we be able to see how much when we retrieve back, you know, our textbooks so that's also one of the things that SA SAMS we use.

I *Okay… yes*.

R6 I would say the principal is efficient on technology, what you trying to actually accomplish, meaning the school is moving towards err everything being electronic like

the other members have mentioned the SAMS err the textbooks the LTSM err our newsletters. And we've got a…

R5 Mmm (affirming)

R6 Website

I *Okay*

R6 (continuing) web page were parents can go into it and basically get information what's happening in the school and err it's moving towards that to actually inform parents of notices everything and as soon and very soon now also the registers are there and soon I'm not saying very soon I don't know how soon but he our principal did mention that even the classrooms are obviously gonna be the children will just have err the biometric system.

R5 Yes (affirming)

R6 (continuing) we don't have to mark registers anymore. So I think in that aspect he is efficient.

I *Okay*

R6 And he brings us news about what actually going to happen, he actually wants the entire school to be err now.

R3 Digital

R6 (continuing) using digital

R1 Mmm (affirming)

I *Okay. In terms of communication with the various stakeholders at this school how does he communicate?*

R5 through the website through our school web page.

I *Which stakeholders?*

R5 Oh with parents.

I *Okay*

R5 So the communication (coughing) is done through the school website and then also with the SMS's I think text messages you know that's how he communicates as well as with other teachers (inaudible) we have a school WhatsApp group where the principal (inaudible) gives us you know important information regarding... (looks to another member of the group) sorry

R3 like announcements

R5 announcements yes so announcements

I *Okay*

R5 (continuing) so important announcements like staff meetings or mmm even if there's something happening amongst the staff, you know, to inform us what's going on.

I *Okay*

R5 (continuing) so he uses that form of that…that platform.

R2 But I don't think it is sufficient.

I *Okay*

R2 Cause we still have our morning meetings.

I *Yes*

R2 Where I think many of those things that are mentioned there can be sent.

R5 Yes.

R2 Through the messages, it's it not always err…

R1 Necessary

R2 Necessary that we meet in the mornings for all of those things I think that many things can be err…can be given maybe by email or…

R3 WhatsApp

R1 WhatsApp

R5 WhatsApp yah

R2 Or WhatsApp or yes

I *Okay*

R3 Mmm (affirming)

I *Is anybody else who wants to add to that…*

R1 Err mmmm… (coughing) so communication.

I *Mmm…*

R1 With the staff from the principal using technology.

I *Right.*

R1 Is that what were you?

I Yes

R1 Eh okay. yah I agree with madam (name of colleague in the focus group). I think err mm… we need more… am I supposed to say her name?

I *It's fine.*

R1 (laughs) I think yah we can do away with…with certain things err even in the staff meetings like…like we… we do get told alright this is going to be emailed to you… you can read through this.

I *Mmm*

R1 (continuing) in more detail err that's fine. We don't need to be read out a document.

I *Okay*

R1 (continuing) it's a waste of time as far as I'm concerned. I can read myself I actually read everything, and I highlight whatever I need to know.

I *Okay*

R1 (continuing) so certain things I think err can be shortened.

I *Okay*

R1 (continuing) and we can have maybe less off and go via the technology route.

I *Alright*

R1 (continuing) the problem with that is maybe some people don't end up reading it.

I *Okay*

R1 (continuing) so we do have to also maybe tell them alright this is the most important point A B C (coughing) and because some people won't read it.

R6 Mmm and on that note as well as what madam has mentioned beside not reading some people haven't got access to Internet.

R1 Mmm (affirming)

I *Okay*

Yes (some respondents)

R6 (continuing) so basically, they obviously now haven't got the data or they haven't got access to internet so are they gonna suffer 3 in that note because…

R1 Mmm

R6 (continuing) because they can't login to get the information out.

I *So is that an infrastructure problem*?

R3 Yes.

R1 Mmm (affirming)

I *And how extensive is that problem at your school?*

Quite, quite (Chorus)

R5 Quite a problem in our school. So there's quite a gap there.

R2 Yes

R5 With access to Internet and then access you know no access to internet so we do still need to have those handouts and that because it's… it's still important like because we not all of us have access to Internet.

R1 All the time.

R5 All the time to be able to constantly get download handouts.

R1 Mmm (affirming)

R5 you know

R1 Mmm (affirming)

I *Okay so does that influence to a great extent perhaps the…the digitals that the principal is currently practicing?*

R1 Definitely!

I *(continuing) in terms of err…whether you receive it or not?*

R5 Yes

R3 mmm…

R5 Yes it does.

I *Okay err mmm I now want to tell you about a new type of Leadership Ok I know to tell you about a new type of Leadership so I would like it to listen to it and then I'm gonna ask you to comment err mm it's called digital leadership. Digital leadership is about establishing relationships, influencing others and initiating change through the use of digitals. It involves new behaviours and skills of school leaders who use digitals to either change or improve the school's learning, teaching and administrative culture to a digital one. Digital leadership connects school leaders with their peers, experts in education, the staff, the learners and parents through digital tools and social media platforms. Digital err leadership enables learners to learn collaboratively beyond classroom walls in connected spaces, online spaces. Some of the practices of digital school leaders include: creating an atmosphere that inspires innovation through digitals; fostering collaboration by leading digital partnerships; being open to new ideas such as distributive leadership practices in the school; being connected learners*

by being an on-going learner of digitals him/herself; err locating and providing adequate.. adequate resources by encouraging students to use social and networking educational technologies; also taking risks to build the digital capacity of teachers; and a visionary focus where work is focused on student learning in the 21st century.

I *So, having heard that what do you think about this digital leadership?*

(coughing)

I *This new type of Leadership, what are your views?*

R5 I think it's the future. I think it's already happening I think that err yah we need to maybe roll the ball a bit faster we…we on our way but it seems as if err a lot of opinions are not actually taken on lot of err suggestions err I think the closed mindset of off certain people err in management limits.

I *Okay*

R1 (continuing) the… the growth of technology in this school.

I *Okay*

R1 (continuing) err…I for one would have said instead of moving everybody out of their classes putting us in new classes and spending whatever thousands of rands take that same money we could have did a lot of technology like advancements with technology with that money rather.

I *Okay*

R1 (continuing) and we could have i think we would have WiFi.

R5 Mmm (affirming)

R1 Err because that that was a big cost.

I *Right*

R1 (continuing) we would have had that internet access which is what we really need.

I *Okay*

R1 (continuing) the white boards which we also wanted would have been also probably in all the classes with that amount of money err even if not that money i think would have been utilised more for technology instead of going err with the route that we went.

I *Okay*

R1 (continuing) i think that we need to our thoughts and our opinions and err and everybody elses' is not taken on.

I *Okay so you saying…*

R1 It limits the… (hesitation)

I *Are you saying the management decisions and strategic plans are counter-productive to the initialisation of digitals?*

R1 Err mmm…

R5 To an extent.

R1 To an extent.

I *Okay*

R5 To an extent.

R1 Maybe it could have been errr delayed.

I *Right*

R1 (continuing) the...the route we went.

I *Okay*

R1 (continuing) till we were maybe setup better.

I *Okay*

R1 (continuing) and then digitally we would have been more advanced.

I *Okay*

R1 (continuing) we would have been I think we would have been set up really nicely.

I *Okay*

R5 Yah

I *Is there anybody else, yes...*

R4 Yah, err mmm I want to say that in my experience…

I *Right*

R4 (continuing) err mmm digital leadership and going forward for example in the Grade 6 classrooms err I know the management has done their research in terms of what to put in the classroom and how to make it work.

I *Okay*

R4 (continuing) but err in my experience err… Say for example 6A. They…you have to give credit. They made the step.

I *Okay*

R4 (continuing) but the problem is that now when I'm designing my lessons I'm designing a digital lesson for 6A.

I *Okay*

R4 (continuing) and then comes 6 B, C and D I'm still on chalk. So now this is even though we taking a step forward. For me it's like actually double preparation cause I have to prepare chalkboard lessons and digital lessons.

I *Okay*

R4 (continuing) so as madam's saying then probably they should have delayed the process and one time start full out.

I *Okay*

R4 (continuing) or maybe the entire grade six and then err as you (inaudible) I think in terms of digital leadership… leaders.

I *Right*

R4 (continuing) are not so skilled.

I *Mmm*

R4 because err if there were skilled in terms of implementing this here, they… they would have probably been seen say for example in the (inaudible) for example when I was a student teacher I think some of the primary and high schools where its working and where it's not working.

I *Okay*

R4 (continuing) for example like even let's say management they were saying of putting tablets in the classrooms I actually think first then how a tablet doesn't work in a class.

I *Okay*

R4 first hand not theoretically.

R5 Mmm (affirming)

R4 (continuing) so in terms of this whatever that digital instruments you want to include a classroom (inaudible) before you go ahead, you need to be skilled on it, you need to see does really work. How does it work? and then implement.

I *Okay… what are* (interrupted by R2)

R2 I.. I ..I just feel is there is a big gap…

I *Okay*

R2 between leadership and the educators.

I *Okay*

R2 I think if there is more of (inaudible) communication.

I *Right*

R2 the whole process can err (inaudible) yah (inaudible) it will go faster because now because of the educators are not all on board

I *Okay*

R2 because we not enlightened properly.

I *Or perhaps maybe not included enough…*

R2 or included thank you. Included in it. The educators are…are actually lagging behind.

I *Okay*

R2 (continuing) they not on board.

I *All right*

R2 (continuing) so i think it's it's this the communication between leadership and the educators (inaudible) is to me a very big problem.

I *Okay but in terms of this that I've read to you (coughing) what digital leadership actually is about. What you think about this new style of leadership?*

(silence)

I *What is your opinion on it? I know you said it was something for the future, what are your thoughts?*

(Phone vibrating)

R6 I would say it would work madam for the near future because obviously it's a lot of plan a lot of preparation involved.

I *Okay*

R6 (continuing) and a few years to come, people obviously will be skilled in using certain apparatus, because people obviously need to be trained.

I *Okay*

R6 (continuing) use certain apparatus, whatever they will use, as sir mentioned about the tablets, but in the first place now it has to be tried out.

I *Okay*

R6 (continuing) to err iron out all the problems.

I *Okay*

R6 (continuing) so if the problems are all ironed out and then we can set on one apparatus to use this Okay, this is fine it worked 100%.

I *Okay*

R6 (continuing) It's pointless we gonna go into the thing and then we sitting with a lot of problems.

I *Okay*

R6 (continuing) and err… obstacles in the way and moreover as errr..the lady before me spoke about the gap of communication they have to be a common ground of understanding.

I *Okay*

R6 (continuing) if there is no common ground of understanding (Cough) the staff with the management and the level ones and people down there things are not going to go smoothly so. It's not gonna work out.

R5 Err… sorry I just want to go back to that study. Err mmm I I do think it's the future like madam (name of one of the respondents in the focus group) said and I think we trying as hardest possible (background noise) to also get in. Start with it.

I *Okay*

R5 (continuing) like we use that Google Classroom.

I *Right*

R5 I thought about right now you know we use Google Classroom because our kids are always on the phone like they constantly on the phone so if I the teacher posts something like oh you have homework tonight or something it immediately pops up on their phone it can remind them so I think with that like that type of leadership if I'm I might be misunderstood but I think Iike google classroom and that err would be like a good platform to use…

I *Okay*

R5 (continuing) you know it's like gives you that one on one.

I *Right*

R5 (continuing) with the kids.

I *Okay*

R5 (continuing) you know and you can like err…

R1 Mmm (affirming)

R5 (continuing) go down to their level and you know I don't know.

R1 Using technology
R5 Using Technology using the digital age you can use technology to get to them in their home. You know like that that would never happen before.

I *Err Is Google Classroom allowed at your school by your principal?*

R5 Yes it is allowed but we have some of us do have google classroom.

I *And that's an online space?*

R5 Yes it's an online teaching space.

I *Does it allow for collaborative learning?*

(silence)

I *between learners*

R5 Yes. Because they can also like chat to one another on there.

I *Okay*

R1 On that note, I haven't even used Google classroom and I want to use it (coughing) I was actually very err excited to hear when Mr (name of colleague in the focus group) and and (laughing) other teacher err said that they were using it but I..I wasn't clued up let's say…

I *Okay*

R1 (continuing) to even think of how to start it where to start? Err I think like madam said here that you know we all need to be on the same sort of page.

I *Okay*

R1 (continuing) one is talking 2030.

I *Right*

R1 (continuing) and some are stuck in 1910 so (inaudible) it is a bit of a gap were some are not actually even ready for the technology let's say…

I *Okay I'm going to revisit what you just said little later on in the interview but err…we will get to that point.*

R3 Can I just (inaudible) okay with the Google classroom we used it last year also I used it for my grade fives.

I *Okay*

R3 (continuing) I have all my (inaudible) on google classroom I used it a lot. Reminders, work everything I used to do with the… Like Maths we do the Hots questions…

I *Okay*

R3 (continuing) so I used to post it for them and they used to write it in their books from the Google classroom but the problem I had with that was…was not everyone in the class had access.

R2 yes (affirming)

R3 (continuing) to the internet

I *Okay*

R3 That was the problem…

I *Okay*

R3 and half the class had it.

I *So learners don't have access?*

R3 Yah

I *Err… is it only an internet issue or is it also that some learners didn't have devices?*

R3 Devices as well. So some Most of them, okay. Okay half the class had access.

I *Okay*

R3 The other Half of the class that did not have either had a device but had no internet access.

I *Okay*

R3 or they didn't have anything so…

I *and possible reasons for that?*

R3 Err…maybe their background.

I *Okay*

R3 Err mmm they couldn't afford it.

R2 Poverty

R3 Poverty

I *Okay*

R3 Yah

R2 Alright the place where we are situated, our school is situated.

R5 Mmm (affirming)

R2 Err gives us this err mmm group of learners (inaudible) that has everything they need.

I *Right*

R2 (continuing) and then there's a group of (inaudible) learners that is really needy.

I *Okay*

R2 (continuing) and that is makes it difficult with all of these like Google Classroom.

I *Okay. So would you say in other words, there is a digital divide between learners?*

Yes (chorus)

I *Is that the same for educators?*

Yes…yes (all respondents)

I *Okay*

(coughing)

I *Tell me err who else in this particular school has opportunities to practice this type of digital leadership in the school? and perhaps maybe you can explain it by describing some of their practices.*

R5 Could you elaborate on that question? I'm not to… (inaudible)

I *Okay, so besides the principal and the school management team…*

R5 Mmm

I (continuing) *is there anybody else who has opportunities in the school to practice digital leadership? For example, the communication, access to SAMS using the data analysis, err and if yes, who are they?*

R1 We. Some of us are in charge of the stock for SAMS. So I do the NS and Tech stock. Err some of the other teachers have the textbook stock, we've got our art stock so that's all educators.

I *Okay*

R1 (continuing) as well as the librarian for the marks (inaudible) SA SAMS so there's many people actually that are…

R6 on board

R1 (continuing) ya with the…what was it? err

I *The digital practices*

R1 Yes, the digital practicing we do practice some of it.

I *Okay*

R1 (continuing) for SA SAMS Yah

I *So in digitally speaking how do you err compile your stock in terms of digital practices. How do you do it, do you use a specific program?*

R1 Err mmm…we supposed to be using SASAMS. I haven't used it yet.

I *Okay*

R1 Err we're supposed to get training.

R5 Mmm (affirming)

R1 (continuing) if I'm not mistaken, so yah, we haven't got any training yet and I haven't used it yet so at the moment it's still manual

I Okay

R1 (continuing) err we've just got our printed out sheets, we wrote.. wrote it on there, typed it out printed it.

I *Okay, but it's done electronic?*

R1 it's done electronic yah.

I *so from there are you able to use platforms like the email to send it to various people?*

R1 yah, email I'm proficient it's it's just SASAMS specifically that I haven't actually got too much experience on.

I Okay

R1 yah

I *Anybody using social media platforms for leadership practices? Any educators in school?*

R5 No, Well not personally.

I *Okay. Anybody else has opportunities for digital leadership practices maybe not yourself but you see other people besides the principal and senior management.*

R1 You mean…

R2 In our school specific.

I *Yes or in another school.*

R2 Yah in the other Schools there's err my daughters are both at schools that err that use these digital on a daily basis.

I *Okay*

R2 (continuing) so that everything that we've been speaking about now is part of their school.

I Okay

R2 everyday

I *Alright*

R2 err

R6 maybe on that note (inaudible) okay on that note about digital there are educators (coughing) obviously when we have functions we want to have something taken for example number educator number five…

I R*ight*

R6 (continuing) uploads all those photos and err whatever happens in the school.

I *What happens with those photographs?*

R6 and it goes onto the website.

R5 The website yah so goes with the website.

R6 (inaudible) and the principal

R5 yah

I *Okay*

R1 Mmm (affirming)

R6 It's the level one educators that's making the most of it.

I *So how would you categorise the level of digital leadership practices then amongst educators, what level?*

(Silence)

I *is it Moderate?*

R5 I would say moderate.

R1 Mmm (affirming)

R5 like I don't think it's…

R2 Mmm (affirming)

R5 (continuing) way above I think it's moderate…it's getting there…but no maybe (most of the participants talking together) (inaudible) its not medium like you get out of 10 out of 10 I would say maybe a seven.

seven (chorus)

I Okay

R5 (continuing) six and a half seven because also with regards to err mmm communication we have a HOD's err mmm sending us pictures of the memos telling us notices we have like we all have our own department group…

R1 Mmm (affirming)

R5 (continuing) right WhatsApp groups…

I Okay

R5 (continuing) like our HOD will remind us oh there's a meeting this afternoon or you have to go for a CIF meeting or you know so they send pictures of the memos…

I Okay

R5 (continuing) so instead of emailing it to us we get it on our on our (inaudible) phone. So that's also another way.

I *Do educators have opportunities to use other social media platforms like maybe Facebook, where you collaborate and share information with each other?*

R1 Mmm (affirming)

R3 Yah, yah, we do Facebook yah, I err cannot with learners.

I *Right*

R3 with educators yah, I use Facebook. So when I see something that's relevant to our schooling, then I either tag

R1 Mmm (laughs)

R3 (continuing) or I share it as a post.

Mmm (Affirming by some of the respondents)

I *Okay. Err Do you get much feedback from the post?*

R3 Sometimes

I *Okay*

R3 depends what I'm posting.

R1 Mmm (laughs)

I *Oh Okay*

R1 Even on Instagram. These is or there are the few things that err some of our colleagues do post on Instagram, so we do not maybe on a high scale, I would say, but it is. Yah, there are some.

I *Okay. Err I want you to think back over the past couple of years of the way that things were done in school what particularly has improved or maybe not improved since digitals were introduced into the school, you can tell me about the positive and negative experiences that you've had with Digital's in the school.*

R1 Okay. I remember when we had err the computer room running, and after that, we had the tablets as well. So err mmm the computer room without before the tablets, just the computers, Internet access err actually worked well. It worked well.

I *Okay*

R1 (continuing) Because even though some computers were a bit slow, I guess when… when all the children were using it, it did get a bit slow. But we could go on Google check the pictures, show them whatever we needed to show them. So it worked. The tablets was a complete fail.

I *Okay*

R1 (continuing) the batteries stopped charging, we charged them for a whole day and some of them still never charge.

I *Okay*

R1 (continuing) and then also the issue of one went missing, which we did find.

I *Okay*

R1 (continuing) but it never works. Some children couldn't even actually log on into the tablet to use it.

I *Okay*

R1 (continuing) so it was it wasn't the best option and like the others also said that it doesn't really work very well so the tablets I found was a fail and then now at the moment err we only dependent obviously on the teachers laptop and whatever the teacher has downloaded…

I *Okay*

R1 (continuing) so for the last few years I can see a sort of down a downgrade from what we had…

I *Alright*

R1 It's less it's definitely less.

I *Has it improved or unimproved your teaching?*

R1 Err mmm the thing that is… is better now is that I.. I can I download everything I need for the child ready on the laptop…

I *Okay*

R1 (continuing) and I project it. so it's maybe (coughing) less time wasted more control…

I *Okay*

R1 (continuing) of what I'm showing them err but at the same time I feel the child sitting in front checking it themselves, it's more maybe of a memory to them…

I *Okay*

R1 (continuing) maybe they'd remember it better because they also went I told them look for for example rain forest animals they can go and look at as many and whatever animals they feel now they limited to what I showed them…

I *Okay*

R1 so when it comes (inaudible)

Interactive (some of the respondents)

R1 It's more interactive

I *In terms of other digitals that weren't here previously that are here now.*

R1 like the biometric system

R5 mmm…or the projectors are those one of the things that we can say…um yeah the projectors are good like it like it works last year when I had my own class I used to use the projector almost every day like almost every second third day (mmm) if you look at the we actually have a log book of who used.. (mmm) I feel like I probably would have had My name would be there a lot you know the problem with that now is since the beginning of this year and I think this is because of the because of other factors I have not even been able so it's it's definitely downgraded. This year I have not used the projector once and last year I used to be so interactive with my kids we used to use Iike I use to even… cause I had internet I was lucky enough.

R1 Mmm (affirming)

R5 (continuing) to have internet access right and I can use my phone also.

I *Okay*

R5 (continuing) so in that way I was fortunate. Err mmm…I used to (coughing) say they didn't know what polar bears was. I know one year they didn't know they didn't know what a seal was the kids did not know (inaudible) I literally just had to google it seal there was a picture of a seal and they knew what it was so my I feel like my teaching has been downgraded…

R1 Mmm (affirming)

R5 (continuing) a lot like I feel like I'm not an efficient teacher this year (coughing) because my digital resources have been taken away from me drastically so yah…

R1 yah (affirming)

R5 (continuing) I don't know if it sounds dramatic but I feel like that…

R3 Yah (affirming)

R5 (continuing) like I feel like my digital resources have been stripped of me and I am just like a chalk and board teacher so our school has definitely moved ten steps back…

R3 yah (affirming)

R5 than what they were previously.

R3 I agree with her also.

R1 Me too

I *Okay*

R3 We used to also like for Maths we do use the projector a lot.

I Alright

R1 Mmm (affirming)

R3 And for Maths also err mmm when we do our sums on the board so we…we project we like example (inaudible) err Mr here (pointing to one of the respondents) he also.. yeah he also uses the projector where we project past papers and we work on the paper as we project we write on the board to show like this year I haven't touched the projector as well because it's difficult, I don't know how to do it I don't know when and times times a problem.

I *Okay*

R3 So I also feel like It's downgraded.

R5 like definitely we've downgraded.

R3 Downgraded yah

R4 Err…mmm if I look at my last year's form class whenever I wanted to do a (inaudible) presentation or video I could book the projector my normal school bag, my projector bag, laptop bag etcetera make sure I come with my speakers and cables if I look at my current form class I don't (inaudible) just use my laptop, the vj cables is ready for me. I just need to pull it out. I don't have to carry a projector.

I *Okay*

R4 Yah just a matter of plugging it on and…

R2 That's one single class.

R4 That's one single (inaudible)

R3 But you the only lucky one.

R4 Yah

R5 So you…you you've moved forward but the rest of us… (inaudible)

R6 (inaudible) I think with 6A with my corrections…mmm… Yes, I can put on projector. I'm battling with other classes. All my corrections are electronic so now I got to write on posters and things like that for each class so if I go the class…

(inaudible)

R5 Which is also put digitally…

R6 (continuing) and I have got singles so if I come back its rubbed out I got to rewrite. So err it's frustrating.

I *Okay*

R3 Mmm (affirming)

R6 (continuing) that you rather write it on posters and basically put it up but that one class 6A.

R1 Yah

R5 Its working fine. Yah, they totally.

R1 on that note yes, I have actually…

R6 you don't have to carry anything.

R1 (continuing) tried to use the projector because I also like the other teachers, we are so used to it and it really enhances the lesson…

R5 Mmm (affirming)

I *Okay*

R1 and most of our things have become electronic corrections, notes…

I *Okay*

R1 certain things are already electronic and ready to us because we've been using it for the last few years…

I *Okay*

R1 (continuing) so yes, we've we've got more projectors now. But we using it less I tried to use it in the second week this this year and it was extremely time consuming to keep on resetting up the whole thing and each class is different. So now you have to figure out how far from each class within the table…

Mmm (Some of the respondents)

R1 and whatever. So the 6a yes that's the perfect class it works like a dream I have used that one there it's perfect…

I *Okay*

R1 (continuing) I have no complaints it… if all the classes were like that. Yes it would be ideal err… but at the moment (coughing) its ten steps backs for me as well. I haven't used the projector.

R2 Yah, err I found the previous year that my colleagues used the one to booked it and whenever I got there it was just not available.

R5 Mmm (affirming)

R2 So at one stage I wanted to actually buy one.

I *Okay*

R2 (continuing) err but knowing that I was going this year you know I just thought it's… it's not worth it. I use my phone a lot in class.

I Okay

R2 I search for things I send it around (inaudible) It's time consuming but we do we listen to songs Afrikaans songs and things which I download on my phone and so I use my phone a lot in class.

I *so are you allowed by your principal to use your cell phones for digital teaching and learning in the class?*

(inaudible)

R1 We are not allowed to use our phone in the class (inaudible) we're not allowed to use the phone in the class as far as I know yeah for personal use but how do you know you know you pick up your phone you could be doing some research I literally Google certain things in the class…

Yes (chorus)

R1 (continuing) with a child asked me what is the speed of the helicopter How long will it take to get to they're asking me how long to get to wherever they want to go with a helicopter I checked because I don't know the speed of the helicopter and the petrol or whatever usage I have to check on my phone…

I *Okay*

R1 (continuing) so that rule of we not allowed to use a phone during teaching time I'm not sure how strict it is and how flexible it is as far as I know we're not allowed to use our phone so it's a bit it needs to change because we do use we need our phone for announcements for research purposes.

I *Okay*

R4 Mmm (affirming)

R1 (continuing) on the ball answering in the class we it actually is like you say of its part of our teaching now.

R2 last year we were allowed to the children were allowed to use their phones for certain exercises that they had to look up things

R Yes

R2 I Know

I *Okay*

R2 (continuing) I spoke to the deputy principal…

I *Right*

R2 (continuing) and I was told the children were allowed…

I *Okay*

R2 (continuing) so that is why I never thought it would be a problem if I used mine…

I *Okay*

R2 (continuing) yah because the children were allowed they brought the phones I kept it in the cupboard it wasn't for me but they brought their phones and they used it in class. To do research.

I *so far I have picked up that you'll use projectors, laptops, some tablets and cell phones. Are there any other digital tools provided to your'll by the school and the principal for digital teaching and learning.*

R5 Not that I can think of (whisper) not that I can think of No.

I *Okay. And…*

R4 Err

I *Okay…*

R4 In the library, the smart TV, I personally haven't used it but I would love to use it.

I *Okay, do you have access to the smart TV?*

R4 Yes but also on that note, if we could get like training from management at least for one lesson as level ones we could implement.

I *Okay*

R2 We've used in the past I know other teachers too for the films.

R5 Yah

R2 Especially History and stuff and I used it for Afrikaans films. Yah. Many times.

I *Okay. Coming back to a point that you made earlier, which is the basis for my next question. How does the principal support your challenges your digital challenges in the classroom and from what you're saying was and the gentleman that just spoke speaker number four about training. You want to elaborate more on those challenges*

first, and then perhaps how your challenges are supported by the principal digital challenges.

R1 Um, I don't think all of our challenges are being supported I think a lot of it doesn't actually materialise certain things Yes, it's in the pipeline but it stops there…

I *You want to give examples…*

R1 the Wi Fi…the Wi Fi I know for a fact that there has been quotes given for (coughing) the for the installation and the monthly cost and whatever it is for our school to have Wi Fi and it was just left there at that point it was not taken further So from my perspective if you've got money for these other things plus we've got money coming from the hall and whatever there will be a way to … this is also where like we may be had this miscommunication of where I'm not even informed properly. Maybe

I *Okay*

R1 (continuing) to me it seems like that is step one. You can't talk about face recognition systems when you don't even have Wi Fi…

I *Okay*

R1 (continuing) that is like a basic thing in many countries now so that has stopped dead in its tracks. I don't even know why I think maybe because it was too much financially but that wasn't even something communicated to us. We just told it is happening.

I Alright

R1 So I don't even know what's the progress when the timeline.

I *So you say one of the challenges is infrastructure. Are there…*

R1 definitely

I (continuing) any other infrastructure challenges?

R1 mmm…with at the moment with our classes. The infrastructure challenge would be having the screens, having the projectors that forms part of the infrastructure right.

I *Yes…sure*

R4 Okay err… mmm from how… from how I look at things err…mmm personally, I don't see the logic behind our let's say how our digital leadership is running err…mmm from a person being assisting my deputy in LTSM.

I *Okay*

R4 If I look back at the cost of these steel cupboards and I look at the cost of atlases…

I *Okay*

R4 (continuing) that we needed to replace and buy…

I *Okay*

R4 (continuing) if you round up that figure…

I *Right*

R4 (continuing) instead of teachers let's say from last year err…mm teachers moving we should rather keep maybe like if I am err now in power in management…

I *Okay*

R4 Digital leadership

I *Right*

R4 (continuing) if I want to hit that certain benchmark I would have rather kept things as is…

I *Okay*

R4 (continuing) instead of buying my steel cupboards and textbooks etcetera (inaudible). Hear what the level one educators want. In a simple start to be like in the 6a class would be the projector mounted on and just a normal white board like how err (background noise) gentlemen number three had in his old class.

I *Okay*

R4 (continuing) so a simple move like that like a mere start instead of buying steel cupboards and getting the carpenter to put cupboards and…

I *Okay*

R4 (continuing) so the money should have been used… be used rather like it should have been implemented effectively if we want to go digital.

I *so in other words are you saying maybe that perhaps the LTSM being purchased is not moving towards digital?*

Mmm.. yes.. (chorus)

R4 true…true

R6 Yes

I *Okay*

R5 With regards to also training I just like… a few years back (background noise) we all got laptops okay and everyone was excited and using a new laptop and then we were promised training and we…we got a training but we didn't get a training that was helpful. It was basics like how to make a folder on your computer how to, you know I also felt the training was lacking in a lot of ways the training was because you know something that we could use in class also a lot of us do have that knowledge that how to make a folder and how to do simple things you know so they should have had level one training, level two training, level three training but they just have this basic training where also half the training was just people chatting and you know, what I'm saying it wasn't like effective training to use. I would love training If someone would give me training on how to do Excel or use Excel properly how to use Microsoft effectively. I know how to use Microsoft. I said I got a basic knowledge of Microsoft and I feel like we could use Microsoft so much for PowerPoint in our class, if we just got the training we constantly even in our PGP's are putting can we get training, computer training and yes it's coming It's coming you know so

I *Can you tell us what the PGP is about?*

R5 The…our IQMS err mmm…our IQMS our PGP is our what?

R1 Personal growth plan

R5 Personal growth plan you know so I know many teachers put there that they'd like computer training so but they should have like level of classes maybe we don't have the reason I don't even mind doing training myself for level ones who don't know the basics because I know basics about computers but for us, some of us who know a lot to be like more training.

R1 Yes (affirming)

R5 You know to build our knowledge

I *So is there this disparity amongst the staff where some are computer literate?*

R5 Yes, yes

R1 Yes, for sure

R5 Yes, yes

R1 And I think on that note the certain when the training is given, it's basically like she says caters for the level one err…

I *Okay*

R1 (continuing) or that the basic skills (coughing) which in today's time nine out of ten teachers have.

I *Okay*

R5 Yes

R1 So you're not actually improving on…on anything we already know actually a lot more than maybe they think you know so I feel that yes we need to step it up a lot and in terms of the training yes to (coughing) have a date between this if you're interested if you need this help come or if it's too little people then arrange a meeting but most of the staff I think are quite clued up when it comes to using most functions. We want a little bit of a higher level training.

R5 Mmm (affirming)

I *Okay*

R5 Also give us the opportunity to help.

R1 Mmm (affirming)

R5 You know, we have the knowledge.

R2 Yes

R1 Mmm (affirming)

R5 I…we have the knowledge in us, let us be digital leaders.

R1 Mmm (affirming)

I *Okay*

R5 Let us be digital leaders…

Mmm (affirming)

R5 (continuing) to our colleagues who do not know, you know, give us the opportu... I would gladly do…

R1 Mmm (affirming)

R5 (continuing) training if somebody asked me or if I was given the… we not given that opportunity…

I *Okay*

R5 (continuing) only one management.

R1 Yah

R5 (continuing) is looked at

R1 Person

R5 (continuing) one management person is looked at…

I *Okay*

R5 (continuing) oh, they know everything about computers they are like a IT specialist but it's not like that, we know, we know about it.

R1 Yah (laughs)

R5 Give us the opportunity to be digital leaders.

R6 It comes all down to teamwork.

R5 Yes because we will help (interrupted with agreement from all respondents) each other

R6 Teamwork, teamwork

R5 Yah we will help each other gladly.

I *So in other words, are you in agreement with digital leadership that advocates this type of distributive leadership?*

Yes, yes (Chorus)

R6 Definitely

R6 Definitely

R5 Yes, definitely

I *To people where the strength lies…*

Yes definitely, hundred percent, definitely (all respondents)

R1 I think even we should as part of the whoever in the staff would like to suggest training topics or like for example, I could say you want specifically PowerPoint. Do you have a workshop on PowerPoint whoever knows PowerPoint, you don't have to come, the ones that really want a bit of an improvement, they can go and have that training specific.

I *Are you allowed to specifically indicate in your PGP err the level of training you want or maybe the topics for training (background noise) … are Digitals. Are you specifically allowed*?

R1 I'm not sure how

R5 I'm not sure.

R1 I don't think so. (inaudible)

R1 not specific

(inaudible)

I Have you tried to communicate with management err…your need for the type of training that you are lacking?

R6 I think we too afraid to talk up because you never listened to.

R5 Yah…yah

R1 yah

R5 true

R6 that's it, nobody listens.

I *Is fear the only factor*? (background noise)

R4 If I may say all of what number five is saying and number…

R1 One

R4 One…I think that we can't reach your goals and our targets because as we are saying we…

R6 Restricted

R4 There's no open platform and hence if there was a…open platform, we will achieve what you want.

R5 Yah

I *So is the management style, at your school, digital or is it something else, In your opinion?*

R1 I think its 1910 and I think it needs to move to digital. We need to be more focused on what we need to achieve. If you want to achieve a certain amount of…of like you say digital leadership, you can't be stuck in 1910's framework and 1910's (laughs) frame… frame of mind you know.

I *So is it about a mind set*?

R5 Mmm (affirming)

(All respondents affirming)

R1 I think it is partially

R2 I think mmm… the leadership… the principal of this school has a vision…

I *Okay*

R2 (continuing) a wonderful vision

R5 Mmm (affirming)

R2 But it does not include the staff.

I *Okay*

R2 (continuing) and there falls flat because you could… can't bring this staff with your vision.

I *Okay*

R2 (continuing) you can't make it.

(inaudible)

I *So is it this disconnect between the principal and the staff?*

R5 Yes…yes

R4 True

R1 Hundred percent

R5 There is…yes

R2 What I wanted to say when you said other platforms like Facebook and whatever. Imagine your principal using Facebook to communicate with his staff, small little things like err thank you for the sports day.

Yes (some of the respondents)

R2 I'm not saying open yourself up because I understand his position on this particular position too but small little things with a photo there and everybody sees that and thank you for the function or whatever (inaudible) or remember or reminder for this or this function.

R1 Mmm (affirming)

R2 Err…mmm looking forward to see you just that openness that communication that…

R3 Recognition

R2 Mmm… recognition

I *Okay*

R5 Like for example, our neighbouring school has an Instagram page. Their Instagram page is amazing.

R1 Mmm (affirming)

R5 (continuing) the one day the teachers all wore black they are such a unite.. (inaudible) from well from my view as an outsider they are such a united staff they all wore black for err I think there was one murder at a school or something, you know, then for breast cancer awareness they all wore pink. They constantly updating…

R1 Mmm (affirming)

R5 (continuing) people with what they school is doing they constantly, you know they have got videos there it's… it's such an interactive space. Ex-previous students can even follow what their current school is doing and that's all digital you know they using digital platforms to communicate such important messages that people might even wanna enrol their children into that school because you know like (inaudible) because…

R6 it's exciting

R5 (continuing) exciting cause you see all the things they doing they so united and you know, they don't restrict people from their comments and if you read the comments I don't think you find even negative comments there because people are so like they want to… they like positive about what happens on that page.

R1 Yes…I've also, I follow them on…on Instagram cause it's my ex school and they are very interactive. What I like is that they…they use Instagram actually err it's or this platform this digital platform in so many positive ways err mmm team building if you look at it I mean you feel like a part of that school you want to be part of the activities they advertise on there and I know that teacher that won err the National Teacher awards he is very much interactive with digital also…

R5 Yes

R1 (continuing) they using it in a different level and they got the support of their of the management even the…the management there err I don't think they really err stifle the teachers when it comes to these kind of things. They are pro you know social media and…and showing everybody so we are limited there.

I *Okay in terms of teaching in the classroom and the learners learning cause digital leadership is a lot to do with learners learning (background noise) (mmm) beyond the walls of the classroom, networking with other learners and schools. How's that unfolding at this school?* (background noise)

R5 It's not

R1 Mmm

R5 It's not at this moment in time. It is not. We are stuck. We are kind of…I feel like we've hit a wall like personally like we are stuck there's no… our kids don't really interact with other schools on digital platforms. The only thing we do use is Google Classroom but like speaker three said…

R6 Yes

R5 (continuing) there's such a gap because some children…

R1 Mmm (affirming)

R5 (continuing) have it some don't know you know and so I don't think that err…

R1 Yah, I agree

R6 It's not like full force no because a lot of children are disadvantaged.

Mmm (some of the respondents)

R6 (continuing) they haven't got access to the internet they maybe haven't got the…the phone to actually err communicate or even still maybe they just restricted from, I don't know, to communicate with another school.

(inaudible)

R5 Yah

I *Does the school have a policy on collaborative learning practices of learners on online (background noise) spaces?*

R1 I'm not sure about that hey… we… actually I have no idea.

R4 I don't think so.

R2 Mmm (affirming)

R1 Yah I also don't think so.

R5 Yah

R2 I mean, we are actually asked not to put anything on Facebook.

I *Okay*

Mmm…yes (some of the respondents)

R5 Oh yes

(inaudible) I mean let, if I put something let me say err on Facebook on our athletics,

I *Okay*

R2 Err how positive it could be, how inspirational it would be, but now we feel if something happens.

Yes (some of the respondents)

R2 You were told not to do it.

I *What do you mean if something happens?*

R2 let's say, one of the learners are maybe just let's just think about the teacher that put the children in groups on the first day to make them feel welcome.

I *Okay*

R2 What happened? It became a racist thing.

I *Okay*

R2 So let's say something like that which is possible happened…

I *Okay*

R2 (continuing) you will be the scapegoat. Your school will not your school will make you stand alone. There won't to be that school that's going to stand with you and go through the situation with you.

I *Okay. Any other comments about that.*

R3 Like I was just thinking also like, on that note, err mm (looking at participant) you said that like for sports day you put the picture up, then like maybe err one of the parents see that you put up and is, I didn't want my child to be up, then they complain to management (inaudible interruption) it becomes a big problem then…

I *Okay*

R3 (continuing) so we don't know whether we can or not.

R2 Yah

R5 And also when…when it gets to that escalated, then you just shut it down completely. Like you know, like for example, no, you can't read it all. It's finished. There's no like, let's talk about it. Let's find like a middle ground there's nothing like that it's like no, can't do it. It's finished. It's done then if we get shut off a lot, so we feel like…like digitally we…we can't move forward because we get shut off completely like completely

R4 Err mmm even in terms of like the principal and the staff in I don't know but grade four to seven I don't think is allowed WhatsApp group and even in the announcements

groups err say some things we wanna say something only admins can send a message so there's no (coughing) for me to (inaudible) receive a message I feel.

R5 Yah…even…

I *Why do you think that is so?*

R4 Err (hesitation)

I *Just an opinion…*

R4 I don't know.

R5 I would say maybe I'm to a certain extent people were using it for personal messages and they want to our admin our management wanted it only for professional.

I *Okay*

R5 You know, but then things like there's a staff meeting and putting a thumbs up we got like scolded about you know.

I *Okay*

R5 We putting a thumbs up (inaudible) it's like a signature that oh we received the message you know what I am saying for us digital people.

R1 Yah

R5 We put a thumbs up means Okay, I got the message I'm ne see you at 2:30, there's a meeting not we, you can shut us off because we put thumbs up in groups, you know, you can't say only admins only in a group.

R2 You know what?

R5 So I feel like we shut down a lot digitally.

R2 Yah but coming back to that WhatsApp group, if you look at CPF, right, if someone puts a photo, a message (siren in the background) they are just removed from the group it's no excuse

R5 Mmm (affirming)

R2 Yah it's no excuse… it said it's for the safety of…of the group for safety practices. We don't want good morning messages and things on it. So if you do put something like that on your just removed, and the teachers will very quickly learn…

Mmm (all respondents)

R2 (continuing) to keep it professional.

R5 Yes, yes, true, yah

R2 You understand (inaudible) around it but to me, it's just a… manner of leadership.

I *Okay*

R5 Like speaker two said, you know, we adults, give us the rules.

R2 Yes

R5 There's rules, no good no this message before you start the group, give us the rules, tell us you know what you can't do this don't do that we will abide by them as much as we can we will abide no we actually will abide by all the rules you know put us as part of it (coughing) because we also want to be part of, we want to be part of whatever it is, you know like…

R1 Interactive

R5 Interactive we want to Interact

R6 And on that note as madam as mentioned, give us a voice.

R5 Mmm…yah

R6 (continuing) yes give people a voice…is that hard…just for a voice.

R1 Yah, I think it will literally it will improve (background noise) digitally in many ways the school will improve if you take on board thirty opinions are better than one…

I *Okay*

R1 Or thirty views that is one of the things that that limits the school I feel it's only one person's way one person's thoughts and one person's decisions or maybe two or three but if you the more people suggest or the more people bring in new ideas fresh ideas that's exactly how you will move forward.

R5 Like err mmm this is going a bit off topic but going like back to what speaker four said with regards to the cupboards right we could have not bought cupboards completely we could have just changed it to those padded whiteboards (background noise) I'm sure they probably it was probably about the same price right, we've moved so much more forward than buying steel cupboards for everyone if we just all had white boards like speaker three's last year's class, if we all just had those whiteboards instead of those cupboards, we would have already then we could have taken a projector from the office put it in our classes (laughs) and not have to stick those papers on you know saying like stick those white papers or put on our sheet or whatever we use so now we you know if they just spoke to us we would have said give us whiteboards rather than give us cupboards you know like I think that there's lots of mismanagement and miscommunication that's moving us back a lot.

R1 Technologically yes

R5 Yah, yes. because whiteboard to project on a whiteboard is the easiest thing because then you don't have to stick anything up you just then you could have taken less time for you probably to that day when you did take the projector it would have taken less time.

R1 It would have that day it was horrible because each class had to have one class was sheets of paper. One class there was already some white things stuck on there which we used. I mean technologically that was like Dark Ages for me.

R5 Mmm and then that's also like ten fifteen minutes of your teaching time.

R1 Yes because the paper also the paper doesn't

R5 Yah yah (laughing)

R1 stick flush onto the board so now you need to like prestik every spot to keep it flush.

R5 Yah and then part like flips

R1 Yes

R5 So it's like that green chalkboard

R1 Yes. and then the screen projection is…is also terrible because the child also on the corner can't see err the edge of that err screen and the screen the white paper wasn't fitting ideally for the screen as well. So the screen is projecting half from the green little bit, err

R5 Yah (laughs)

R1 It was a nightmare. The screen is needed.

I *I want to understand this. Is currently digital teaching at this school related to projector and laptop and just doing lessons at face value rather than more interactive using the internet during lessons.*

R5 Yes

R1 Mmm

I *Using things like the Socratic method where you immediately upload your assessments and mark it simultaneously err…*

R1 we far from there.

R5 we very far.

R1 we still at laptop projection stage.

I *So how would you essentially describe the teaching using the digitals that you do have at your school.*

R1 You mean out of a score like a t out of score…

I *Not even a score rather adjectives? How would you describe the teaching that's going on in the class if it is a digital lesson?*

R5 Currently… at this moment in time

R2 Basic

R1 Mmm

R5 Basic

R4 Basic

I *Err how did the learners respond to that? To the learning in terms of a digital lesson and a non-digital lesson.*

R5 Oh

I *What is the difference in the response?*

R1 Completely different

I *Can you elaborate?*

R1 Yes, err mmm I feel now I'm like old school teacher like how my teacher used to teach me and try to keep their attention is very hard. The 6a class like we said is equipped so that one day they were done with their work early and I didn't have to go up to fetch the projector and get the screen ready. I just I could plug in plug in the laptop. I had the videos ready. I quickly show them I tell you that whole classes energy levels went sky high. They was so involved. They were so excited compared to the ten minutes before that when I was blabbing on and on. I need I need that projector I needed actually these children don't focus after a while with just with your voice and textbook.

I *Anybody else?*

R4 Mm…according to research they speaking about attention they speaking about interesting lessons err cognitive level all of that (inaudible) by visual learners (inaudible) personally when I do use it like in 6a it works wonders yah

I *And in terms of achievement is there any correlation between the digital teaching and the non-digital teaching.*

R4 Err there is in terms of my err some of my Maths contents like even when I was marking my assessment err a certain topic I done in 6a with a projector in my I got my b, c and

d the marks are not the same. I can see where there's chalkboard it's slightly less 6a they grasp the concept better. Mmm

I *Okay*

R2 Yes also visual I mean when there's so many visual learners in the class so when you stand in front of the class and you just teaching it's auditive how many the its just like a noise…

R5 Mmm (affirming)

R2 (continuing) passing the ear when you bring in that that visual aspect into it automatically you've got more learners involved in the lesson.

R5 I think discipline would also like it comes to like they more interactive.

R2 Yes

R5 (continuing) so the more like pronouns for example they like looking at pronouns and then you know they actually you can get a lot more children into your lesson…

R1 Mmm (affirming)

R5 (continuing) you can touch more like you know get more of them into the lesson understanding then then when you are just talking and talking some err wanna sleep, some err wanna do this so you know so it's like it that way too I think in that way discipline will also improve.

R3 Because I think err mmm using technology it actually the learners it's for them it actually like it relates to them because they know about technology…

R5 Mmm (affirming)

R3 (continuing) so when you use it in a class they know so that is why their attention will also now so when you're showing them the videos they interested…

R1 Mmm (affirming)

R3 (continuing) it's not like standing by the board writing the things and then like they fall asleep.

I *Okay*

R1 Last year also because of the common paper now I've been putting the common paper also on the projector and we've been using now the past papers like that where there have been also I know the Maths has done it as well. We've been using the projector to do the past papers…

I *Okay*

R1 (continuing) and I've noticed my marks…

R5 Mmm (affirming)

R1 (continuing) with the projector and with all my videos and pictures and that I've had excellent results this year I would actually be very interested to see if there's a there's going to be a drop.

I *Okay*

R1 I will let you take note because I think it has been affected the kids (coughing) learning err and understanding may have been affected negatively with this.

I *Okay. Suppose you had one minute to talk to the principal (laughing) on digital leadership practices, specifically, the topic of today's discussion, what would you say?*

(sigh) (laugh)

R4 Err (inaudible) I'd say he should include first of all he should ask me what do I want in the classroom.

I *Okay*

R4 I might be different compared to number one although we teaching the same grade maybe what she wants and what I want is not the same thing and obviously I'm coming from let's say a thir…tertiary institution how my lecturer taught me…

I *Okay*

R4 (continuing) how I have been trained. So yah he should probably ask me what do I want what will be a good start etcetera.

I *So you want individual err mmm customised sort of assistance?*

R4 Err yah err even it will be on the whole grade six level but err as long as we being heard…

I *Okay*

R4 (continuing) and for example say you hear to speak to let's say all of the grade six teachers.

I *Okay*

R4 Sit us all down. Let me speak (inaudible) etcetera and from there you base your opinion what's the way forward, would be an ideal thing.

I *Okay*

R2 I would say err mmm that his vision I can I understand I hear his vision.

I *Okay*

R2 (inaudible) I hear his vision.

I *Right*

R2 (continuing) but he wants to jump…

I *Okay*

R2 (continuing) and I would tell him you have to it step by step…

I *Okay*

R2 (continuing) because you are not thinking every step over (mmm) you want to get to the end…

I *Okay*

R2 (continuing) but you are not considering the steps in between…

I *Okay*

R2 (continuing) the method of reaching that I think that is…is not there.

R1 I…I err agree with both speakers and I feel also in addition err the open mindedness and more accepting of err other suggestions to…to improve should be taken on not just err you know that one track, one way one…one mind track so yeah, ask everybody get more opinions get the feel I mean the end of the day the teachers that are in the classroom are the ones that know what works what we need and their opinion should actually be taken I would think first because I mean, we the ones that are there.

I *Okay. (looking at the respondents who did not answer) What would you say to the principal about digital leadership practices?*

R5 Give us the opportunity like. Like that's all that it just give us opportunity to like, give, give, listen to our opinions, you know, and just give us the like opportunity to.

(phone ringing) (laughing)

R5 We also went to school to grow like we also don't wanna be stuck and like just give listen to us. Listen to what we have to say. We doing the groundwork, like madam said, we doing the groundwork.

R3 Yah, I agree with all the speakers here. Like there's nothing much I can say.

I *Okay. Err of all the things discussed today in this interview. What to you is the most important… what to you is the most important?*

R1 I think the learner being more in touch with a type of learning they are now expecting…

I *Okay*

R1 (continuing) or used too we need to… we need to teach how they learn.

I *Okay*

R1 So that 1910 way of teaching is the door yes certain things we will have to carry on the same way but I think the most important thing is using this technology err to effectively get through to the learner…

I *Okay*

R1 (continuing) enhance that teaching err mm using it to make them understand in a way that maybe the traditional way can't really accomplish.

I *Okay anybody else?*

R2 I would think that that every educator is a leader…

I *Okay*

R5 Yah

R2 (continuing) and that they must be given the power to be that leader that they want to be in the classroom.

I *Okay, before we conclude is there anything else you would like to add…anything*

R1 Mmm (sighs)

R4 Yah err if you look at the principal, educators and learners…the actual driving force of the school is the teachers, and if an educator is highly motivated, it changes every dynamic.

R1 Mmm (affirming)

I *Okay*

R1 hundred percent

I *And err the motivation would come from…*

R4 Come from the principal hearing what your educators want, helping them, supporting them.

R3 Talking to them

R5 Openness like openness is such an important

R1 Recognizing

R5 Yah recognition also

I *And would that be the motivation* (interrupted)

R4 Oh and another thing is that sometimes like even if you want to give constructive criticism it comes across as maybe disrespect.

Mmm (some respondents)

R4 Yah so its...

I *Why do you think that is so? (silence) is it a way of thinking?*

R4 Mmm (inaudible) It's a mindset, it's a mindset, it's a mindset (mmm) Yah and

I *And you were talking about motivating teachers err mmm because are they are your basic driving force. So, are you saying in other words that motivated teachers will drive digital's better?*

R5 Yes (mmm)

R1 Hundred percent (mmm)

I *But you will require like you said before your basic tools which would be*

R1 *Mmm*

I *(continuing) your basic digital tools which would be?*

R1 Err your projectors mounted in on the roof, your screens, speakers…

R3 Wi Fi

R5 Wi Fi

R1 Yes and then probably like a blackout sort of curtain or err mmm…

R3 Blinds

R5 Blinds

R1 Because the light does affect the screen. So those are I think the basics in the classroom. Yah.

I *Anybody wants to add anything else before we conclude?*

(silence)

I *Okay, thank you for your time and your participation.*

FOCUS GROUP INTERVIEW AT SCHOOL Y

DATE: 2019-02-20

TIME: 14H00 – 14H35

PLACE: Staff Room

(Background noise…learners doing after school extra-curricular activities)

I *My name is Judy Dasruth and I am a researcher. Thank you for participating in this research project. Every effort will be made to protect your confidentiality and privacy since no names will be used that will be that will allow you to be identified. Please be comfortable and feel free to express your views. I will now proceed with the interview. In this interview, the word technology and digitals will be used. Right, just to give you a little bit of clarity about the both words. Both are closely related, but technology is focused on the e-tools, the devices, the gadgets, the applications, the management systems, products and processes that we use to simplify our daily lives. Whereas digitals focuses more on the new behaviours and skills that we as humans do through the use of these technologies, so both of these words can used. Okay, firstly, my first question, please describe from your own opinion, your own experience, what the principal's leadership practices are, that encourage digital use in this school.*

(silence)

I *So in other words, what does the principal do in the running of this school that show the use of digitals? Perhaps particularly the areas of SASAMS, communication with stakeholders, etcetera.*

(Silence)

I *Anything that comes to mind.*

R2 Since we don't have a lot of technology in this school, so it's a bit hard for us to talk about that one.

I *Okay*

R2 Because the only laptops we have are for management and the office filing.

I *Okay*

R2 So those are the people that have the technology for the school.

I *Okay*

R2 That are currently meant for the school. For us it's only when I need to be typing a task, then I can borrow it from somebody and use it.

I *Okay*

R2 Other than that, availability of it is very, very limited to us as educators.

I *Okay*

R2 So it's hard to elaborating on that.

I *Err can you perhaps tell me what the management uses the laptop for?*

R5 Err, for the SASAMS data for the verification of the marks that have been recorded. there. Err I'm not sure the HOD's might be using for. I know the stuff that side they use it to, for SASAMS, for capturing of the learners on a daily basis and weekly basis and then tasks and management of those things that side.

I *Okay*

R5 I'm not sure what the HOD's use them for

I *Right*

R5 Except for borrowing us that's what I see them do, they borrow us.

I *Okay*

R1 And (laughs)… to type those tasks.

I *Anybody else? So is it err… mmm… the, the device that you speak, that the management has? Err… is it used for specifically the SASAMS modules?*

R3 Yes

I *Err… Do you perhaps anybody know what is the level of use of SASAMS in this particular school? Is it only used like you mentioned, for assessment or is it used for other things as well?*

R2 Err since we don't really have access to it we can't really say much on it.

I *Okay*

R3 Because we don't really have, we don't know, but as far as we are told

I *Alright*

R3 We've used eh they…they recorded the daily attendance

I *Okay*

R3 Then on Fridays it has to be the weekly attendance and the teacher's attendance for the month

I *Right*

R3 Basically now the school management has been done on it. We have learner (inaudible) in here. Err the learner's profiles as well we do have a system that (inaudible) operated into it …and… yah.

I *Okay*

R3 I don't know this one.

I *So you saying that the… the track… the laptop is used for management purposes and sometimes it's given to teachers to…*

R3 To type our tasks on it.

I *Okay. Is there any other digitals available at the school beside those few laptops?*

(Inaudible) (shaking heads)

I *And can perhaps maybe you describe the infrastructure for digitals. Is it there? Is there perhaps a reason? Maybe the… is this school a fairly young school?*

R3 Yes it's… its only turning five years old so it's on its fifth year this year.

I *Okay*

R3 So that's why we don't have a lot of things.

I *Okay, so…*

R3 That's the reason why we don't have…

I *All right*

R3 Yes

I *All right. Is there anybody else who wants to say something? Comment on that?*

R5 Okay, just to add on what my colleague is saying here neh. Ehh… Like she said she's saying that that the school is still new.

I *Right*

R5 Err yes It is very true that the school is still new but there is something that is going on yes.

I *Right*

R5 In terms of ICT like the first question that you asked yes.

R3 Mmm (affirming)

R5 We are on par with other schools comp… err

I *Okay*

R5 In terms of ICT because err when we are seated in classrooms we do get er… timetables

I *Right*

R5 Clearly that we can see that they were, err they are from SAMS.

I *Okay*

R5 Yes, err Learners who have err… for example who are misbehaving here at schools, here in the school, normally they do err put all that information in there.

I *Okay*

R Yes. Learners who are been archived, those who come and go, they are being, they are there in the system, so my experience where, I don't use that much of ICT when I'm in the classroom, but with the support that I get and everything that I see I can tell that you are on par with other schools, because most of the things that we get (coughing) the compliments and everything I can tell that they are being done through technology.

I *Okay*

R5 Yes.

I *So if I understand what you saying, part of the reason why there's not too much implementation in the class is because of an infrastructure, err issue.*

R5 Yes.

I *Okay, but once that gets sorted out?*

R5 Then clearly every…everybody will be now hands on.

I *Err how does the staff feel amongst the teachers towards err technology and err in the school itself?*

R5 Err I…I don't think that that our staff has such a serious problem with this neh… because clearly we can see that uh… once uh… the…the school has been built neh.

I *Okay*

R5 Possibly something good will come up yes slowly but surely we are getting there. So I don't see any teachers having a problem when most of the teachers we get a ready- made things and everything.

I *Alright err…yes mam…*

R9 Just to comment on that one. I think err…mmm like my experience my experience what I have saying err some teachers get a little bit frustrated.

I *Okay*

R9 (inaudible) Sometimes they don't have their err copies of tasks on time because we got only one copy machine so no (inaudible) on time supplied and stuff like that so I think It's a bit frustrating not to have technology (inaudible)

I *So again Its an infrastructure…problem err…mmm tell me in this age of technology social…social media platforms is rife amongst our communities. Is any type of social media platforms used for communication in this school perhaps with the principal and the staff, the parents, SGB members…Is a some sort of social media platform that is used in this school?*

R9 Err…mmm yes, for instance in my class I have a group a WhatsApp group with the parents. So that's how I communicate with the parents if I need to, because most of the time parents when you ask them to come for meetings most of them don't pitch up so if I remind them through the WhatsApp group most of them make it to the meeting err I know (learners shouting in the background) that there's also the schools WhatsApp group even though I'm not in the group but I know there is .Err…mmm when the principal err was to notify us of anything like memos or circulars she will send those there then we will know that we have err for instance will have a workshop if it's for the Grade R's they are reminded through that that there's mmm I mean when you've seen the WhatsApp err the memo or the circular in the WhatsApp then you will know that there's an a workshop there's a workshop that you have to go to so there is that.

I *Is WhatsApp the only social media platform used in the school or there are other social media platforms.*

R9 Mmm…I'm not sure (Looking at others) I think maybe someone could respond (inaudible)

R9 Facebook page

I *Okay, got a school Facebook page and err who err is the admin of that Facebook group?*

R9 I think it is the principal.

I *Okay and err can you perhaps explain to us what your'll post on that group.*

R9 Mmm (inaudible) can I can I just like the school has a choir like when they go for their when they've won like our school is very good err (inaudible) in in in

I *Congratulations*

R9 Yah then we will post a video there or the pictures

I *Okay so err is it to err…err increase public awareness of err what you are doing at school in terms of the positives.*

R9 I believe so because err I mean err parents will also be friends of that page they'll be added or they can add themselves err to that page then they will know what's happening at the school.

I *Okay, now I want you to listen to me I want to tell you about something really exciting happening in the field of education. It's a new type of leadership called Digital leadership. Right. Okay. Digital leadership is about establishing relationships. It's about influencing others and initiating change through the use of these digitals. Err it involves new behaviours and skills of school leaders. And these digitals are used to either change or improve the school's learning and teaching culture to a digital one. Digital leadership connects school leaders with their peers, experts in education, the staff, the learners and parents through digital tools and social media platforms. Digital leadership enables learners to learn collaboratively beyond the classroom walls in connected, online spaces. Now some of the practices of digital school leaders include creating an atmosphere…atmosphere that inspires innovation through digitals, fostering collaboration by leading digital partnerships, being open to new ideas such as distributing leadership, err being a connected learner him or herself by learning continuously through digitals err locating and providing adequate resources by encouraging students to use social media networks that have educational technologies in it, taking risks to build teachers digital capacity and a visionary focus where the focus is on student learning for the 21st century. Now, having heard all of that and the current experiences that you're having and challenges as well. What are your own personal views about this new concept of digital leadership? What do you think? what comes to mind first when you hear this concept?*

(silence)

I *Anybody? Yes Sir*

R5 Okay, err according to me dig…digital leadership is quite a very interesting kind of leadership.

I *Okay*

R5 (continuing) that that is one leadership that will encourage most of the learners, the parents, the teachers that we have in South Africa so that we can compete err globally with all other learners and teachers across the world so I think is quite a good leadership that is coming. Err I'm very happy about it.

I *Okay*

R5 (inaudible)

I *Yes mam… anything…what do you think, it doesn't have to be a positive it can be whatever your first thoughts are…*

R2 Yes, me I'm…not to… to…I'm not too happy about it in the schools because now it's taken away from… remember that in the olden days, maybe I'm old-school, we used to have computer labs (inaudible) (back ground noise) and now we have these kids who bring laptop to school, tablets, phones. It also brings a lot of disruption with it that whatever happens in class, it gets easily shared on the internet unlike where it was protected in a protected space (back ground noise) where you go back to the computer sometimes you do what you're supposed to be doing and then that's controlled you can even control the sites that you go to. There's no chance of a learner in the class they're busy filming and not concentrating and just to get into a lot of trouble. A lot of thing that I've seen with cell phones is not positive but is negative, which is really on my side I wouldn't…it's just turned me off. The whole idea of going technology wise when it comes to that yes it's nice and all but we used to have it all this time this computer rooms, but now we never had these problems. Now we have a lot of problems that are negative and not that many that are positive

I *Okay*

R2 So I think with it as nice as it is to have it anytime that you need it but it has also a lot of problems that comes with it because now we don't paste a lot of things because there is this thing that we need consent from their parent to post the child but now when the children are doing it they don't need consent from me to go post it, they just post it…

I *Okay*

R2 (continuing) they post everything and even between themselves as well there's these competitions that are doing at school that they don't need consent from anyone, they posting everything. Everything is posted everywhere…

(Interview disrupted by someone entering and leaving the room immediately and saying sorry sorry sure)

R2 (continuing) so for me I won't recommend it much but I still like to stick with the old system

I *I have to stop the interview*

(interview stopped for a couple of seconds due to someone entering and then leaving the room)

(interview continues)

(background noise…learners doing after school extra-curricular activities)

R6 Like mam has just said it's good to have those whatever but I think on the other hand it limits the…the thinking of our kids…

I *Okay*

R6 (continuing) because every time they have to go there, when they have to think for themselves this computer they press and they know that the answer is there like in the

case of Mathematics and other games they don't have to think, they just go there and the answers are there.

I *Okay*

R6 So it means they are thinking.

I *Anybody else want to add something on that point about digital leadership?*

R4 Yes, me just to add on what they've have already said I think with these digital leadership I think it is okay it is not because we cannot monitor as…

I *Okay*

R4 (continuing) they've already said, some of the other people they don't think before doing anything. They just do it then after posting its then they recall oh I shouldn't have because it cannot be wiped off whatever you've already posted it is it just goes like that without me saying no I can erase that.

I *Okay, so there's challenges err with regards to technology*

R4 There is

I *There's limitations… is that what you saying?*

R4 Yes

I *Okay, err if you had the infrastructure and the tools at your school besides the principal and the school management team would digital leadership practices be distributed to other people within the school. What do you think in terms of the school setup?*

(silence)

R4 Err…I need a clarity on that.

I *Okay…so…*

R4 (inaudible) we going to involve the people from the area or…

I *No. what I'm trying to say is that within the school will teachers be have opportunities to practice digital leadership or do you think it will be strictly confined to the principal and the school management team?*

R4 No, I think even the other teachers might be…might be able to be involved on that so there'll be then less work…

I *Okay*

R4 (continuing) because if we just give it to the principal he… he or she will be overloaded…

I *Okay*

R4 (continuing) you see for the admin work we can also help so that if I've got an assessment I can just type it out then we can photocopy and…

I *Currently do educators at the school have leadership abilities to perhaps practice leadership in the school and are they given opportunities?*

R4 Yes, we are given opportunity because even on the ordinary teachers they are given some time to be maybe per quarter to be accredited maybe for that quarter the following quarter then we just change.

I *Is there any other leadership opportunities that teachers have here?*

R6 Yah I think we do have some leadership err…err skills that we're getting from this school like there are committees different committees at schools.

I *Okay*

R6 So everyone is an overseer of each group so I think from there we learn something as we are leaders of these groups.

I *Is anybody in our group err an overseer of any of those committees?*

R6 Yes

I *Which committee mam?*

R6 The feeding scheme err committee and the ICT (laughs) though we don't have anything

I *Okay*

R6 The ICT…

I *So if you had digital tools in place, would it make a difference?*

R6 I think it would.

I *Okay. Now I want your'll to think back over a couple a years, err the way things were done in your school in terms of maybe typing your assessments err rolling off your assessments and capturing what you mentioned about behaviours, err the curriculum reporting on SASAMS, think back to the days when SASAMS and were not here and you did not have the laptops. What has particularly improved or not improved since the principal and the management team has the laptop and has got SAMS and has got people who are able to use SAMS. Can you relate some experiences.*

R5 Mmm according to me, I can say a lot has improved, err there's a lot of communication and communication is…is…is…is ongoing. We do get most of the things that are happening in our different school, neighbouring schools, in our district, in our province while just sitting here in the school or in our classrooms we just get immediate information so there's a lot of improvement. Gone are those days where (coughing) we would wait for maybe a letter or a fax to come through or what with this digital err leadership there is quite an improvement, we get immediate feedbacks in most cases as to how other schools are performing in terms of the results per term it comes immediately we don't have to wait for a week or two weeks to get so there's quite a improvement.

I *Any other positives or negatives since the laptops are here and SASAMS is being used. Positives or negatives since the past…*

R6 I think it's a negative one that one because everything that is done here it reports direct to the head office.

I *Okay, you want to explain why it's a negative.*

R6 (laughing) is (inaudible) but the fault lies with us because we have to do things on time

I *Okay*

R6 Yah so if you late a bit it reflects that are school number eight doesn't submit or doesn't give their work on time or submit on time

I *And how does the staff react when you get a negative report?*

R6 It hurts because we know that we tried very hard to do what (inaudible)

I *Do your'll get err some sort of support in terms of err SASAMS err for argument sake if a patch is not working err do you get some sort of support and where would that support come from be it internal or external.*

R5 Yes we do support. There's a gentleman whose based at our local district, D2 Gauteng west yah Mr I don't remember his name but we do get a lot of support, yes, every time when our lab the…the laptops have crashed we do phone the guy he comes immediately. Every time when the patch changes, changes neh, there's a new patch that comes it takes about a day two days then immediately we are being assisted. So there is a lot of support that we get.

I *Okay, now we get down to the teaching and learning part, I know mam mentioned that she uses WhatsApp groups in her class but in terms of other aspects, is there any type of digital learning taking place in the classroom itself at this school. Whether it's a basic level or intermediate or advanced or however you perceive it to be, is there anything taking place?*

R2 Mmm…I'd say not really because of the infrastructure of the school

I *Okay*

R2 And because the school is still very young

I *Okay*

R2 We have very, very limited resources so it's…it's very, very limited even just having them having printouts on the internet that's a…that's a luxury for us. Yes, so those kind of things are maybe (inaudible) to us. Even if you do it like I use my tablet some other times just to show them something that I want to show them or maybe make it bigger on a on a laptop because we do have a projector, we have the tablets and things.

I *So you've got those devices…*

R2 Mmm…we have them but access to them there is kind of a challenge because having a project type in the classes that are (inaudible) you cannot project anything properly, it's hard…

I *Okay*

R2 (continuing) for them to see what's it you want to show them so you rather shy away from the projector rather show them through a laptop or a tablet, I always prefer laptop because the screen is bigger so I've used my laptop to show them but that's on rare occasions most of the time if I want that in printed or just for them to have it…it's too limited.

I *So how many projectors err does the school have?*

R2 We have one projector because how we got it…it was not…we had to, to to to exchange it for with another school we had a few more printers so we exchange with another school for projectors. So now we have one projector in the school.

I *In terms of using the projector, if the teacher perhaps does take it out to use in the class, are the staff err err mmm digitally err err aware of how to use the tools.*

(silence)

I *Have they been trained in the use of these tools.*

R2 Not everybody (inaudible) we got those few that…that already know how to use it. I think those are the one that use it but we never have err training (inaudible) the teachers on this is how you use the projector.

I *Have you have perhaps requested for training maybe in your IQMS process for dig… the use of digitals or are you not allowed to do that?*

R2 I think we allowed to do that but it's not something that we looked into.

I *Okay*

R2 As something that is a (inaudible) when it comes to IQMS we focus mostly on the problems that we're facing on a daily basis, because as the environment here the infrastructure and everything (inaudible) we having to sort out those problems first then because we don't have IT we don't really regard it as a problem that was because we don't have it even if you can say we have twenty laptops in the school where are they going to stay.

I *Okay*

R2 The safety of them.

I *The security…*

R2 (continuing) also the security of them is also making sure because having twenty laptops that are staying in one area that's not secured

I *Okay*

R2 It becomes a big problem again.

I *Okay. I want to… you've mentioned that some of you do use the projector, some of you have got tablets. Just for argument's sake, if a colleague err who wants to use it does not have the skill or the knowledge to use the tool. Do you have some sort of peer support group err that assists the colleague who needs that knowledge?*

R2 Yes, I think so

I *Does that knowledge specifically come from peers or does it also come from school leaders?*

R2 From everyone whoever is available to help out on that teacher that needs that assistance at that time, they avail themselves.

I *Okay. Err (clearing throat) you mentioned quite a few challenges in terms of digitals that the school has and I just want a quick sum up of it err mmm you mentioned about the infrastructure, is there any other challenges?*

R2 Mmm…challenges in terms of…

I *In terms of err (coughing) the principal…what kind of support the principal gives if the teacher has challenges.*

(coughing)

R2 From my side the type of support I have received…never (coughing). Whenever I had a problem she's tried to sort it out, to the best of her ability and that's how it's been, she's always tries to help us solve problems whenever she can (coughing) the other teachers (coughing) get that kind of help get from the principal.

R4 from my side (laughing) I think our err principal is so supportive because if you've got a problem if you go to her and explain your problem there and there, she is going to get someone who can help if she cannot help you. She is going to get someone who can help you.

I *Okay*

R4 She is so supportive and whatever she knows just like this a…a research she did allowed you to come because she wanted us to be exposed on some of these things which we didn't know anything about.

I *Okay (clearing throat) suppose you had one minute to sit down after this session and talk to your principal on a one on one basis about our topic of discussion for today, digital leadership practices of a principal, what would you say to the principal?*

(silence)

R5 Err…my word to the principal would be this err digital leadership phenomena you should be very positive about it, everybody must be on board, we should not have any fear as human beings I knew that it is normal for us to have fear to go to laptop or to Google and do things but to my to the principal I'll say err a err request maybe or I'll suggest that everybody is being brought on board so that we are all competently trained we know what is going on.

I *So you saying training will be an important part.*

R5 Exactly

R2 Mmm (affirming_

R4 Mmm (Affirming)

I *Anything else…you would say to the principal…*

(silence)

I *anybody…*

(silence)

R4 I would err congratulate her for a team to come here. And then because this was err thought provoking. I was just wondering on this research, what are we going to get and is it something which I was (laughs) supposed to go to or but now then again, I feel err free and I still need some more knowledge whatever you've got you can just give it to us (laughing)

R9 Err (clearing throat) does any of you here see yourself as digital leaders?

(nodding heads)

I *I can't hear you…is that a yes?*

Yes (all respondents)

R5 It's a yes (laughing)

I *Just quickly, what of all the things we've discussed in the interview today, what to you is the most important thing. What to you, all the things we've discussed…mam*

R1 Err mmm the most important thing …alright, I think everything we talked about is important, but (laughs) the infrastructure

I *Yes*

R1 Yah because most of our challenges is…is starts there.

I *Right*

R1 No, we can have the digital things and then the IT err mmm what you call them...

I *Digitals, tools, gadgets*

R1 Yes tools, but, if we don't have the right infrastructure though it will be difficult for us to use them. So if you can just start there.

I *Okay*

R1 (inaudible) I think everything will just get together (inaudible)

I *Anybody else, but what was important to you.*

R2 (clearing throat) for me it was like, I took it lightly that we need training to change, everybody. So it was more the eye opener for me that if I know something that I…I take it for granted that for IQMS that we need to put those things in their because as in the long run it will help us a lot and if you put those there as some things that we need but because we've been focusing on academics and (inaudible) papers we cannot forget those type of things that we need trainings on. And to be honest, we do need trainings on and it will help us especially when it comes to (inaudible) because we will not have this infrastructure forever.

I *Okay*

R2 When we don't improve obviously with time but when that time comes I'll be equipped to…to be able to handle what comes with it if we do that now we aware now before our infrastructures change.

I *Okay*

R2 So it don't help us a lot.

I *I don't want to leave anybody out…yes mam*

R6 Err… (clearing throat) I think it taught me that sharing… (nodding head and laughing)

I *Okay…yes my dear*

R6 Yes, I think on what you have already said, everything was important.

I *Okay*

R6 But I think if you can have err a projector we can start with the projector

I *Okay*

R6 At our school if you can get someone who's having (laughter) an old projector to come and give it to the school.

I *We'll look into it (jokingly)*

R6 Thank you (laughing)

I *Before we conclude, is there anything else that you would like to add?*

R3 Oh, I wanted to answer that previous question that err I think digital leadership is necessary because err I know that err there's a lot of people who are not computer literate and who wish they could be computer literate, I mean amongst the teachers, I'm in the foundation phase, but I know there are a lot of people who have challenges like, for instance, if you have tasks and maybe they're busy in the admin I mean if you knew how to err use the computer, if you were computer literate, then you could type out the task yourself and print it out and err it would be much faster that way.

I *Anybody else…*

(silence)

I *Thank you for your time and your participation.*

FOCUS GROUP INTERVIEW AT SCHOOL Z

DATE: 2019-03-01

TIME: 13H00-14H00

PLACE: Staff Room

I *My name is Judy Dasruth and I am a researcher. Thank you for participating in this research project. Every effort will be made to protect your confidentiality and privacy since no names will be used that will allow you to be identified. Please be comfortable and feel free to express your views. I will now proceed with the interview. In this interview, the word technology and digitals will be used, just to give you some clarity. Although both terms are closely related technology is focused on the tools itself, the devices, the gadgets, the applications, your management systems, your products and your processes which we use to simplify our daily lives whereas technology focuses more on the behaviours err and the practices that arise from the use of these technologies.*

I *Are we clear on that?*

Nodding heads (all respondents)

I *Okay (Clearing throat)* please describe from your own experience, your principal's leadership practices that encourage digital use in this particular school.

R6 Mmm…each morning, err…mmm the meeting that we have (laughs) in the mornings err…mmm he puts it on err he emails the agenda or whatever to every teacher, which is very nice because if you are on duty, then you don't always get all the information of what was err spoken about.

(muffled sound)

R2 Can I just add to that he used to do it we don't get that…

Anymore… so much anymore… we don't… (most of the respondents)

R6 Oh yah

R2 (continuing) so err when like only when there's circulars or memos to be sent then he emails it but we don't get the minutes of meetings for the morning meetings anymore

I *(Clearing throat) Anybody wants to elaborate a little bit more on what the principal does in the daily running of the school that actually show digitals are being used say particularly in the areas of communication. How does he communicate with the staff the parents governing body members the learners and maybe even SASAMS.*

R4 Err he communicates with that group we have the group of that group we have on…on…on err

R1 on WhatsApp

R4 Yah the WhatsApp group and also the other one the converter or the that he sent

R6 (inaudible) D6

R4 Yah D6 (inaudible) communicator yes that he use with the parents and with the staff he communicates with us over the intercom if he needs us.

R1 Yah…yes and he does make use of err email if there is something from the department if they send out a memo or a circular in the past we used to copy it and have a memo file were we would put memos or circulars into it now you have it on email so when you check your email there's circulars or memos or anything related to what they get from the department and he forwards…forwards it to the staff that is involved in that if it is your foundation phase or your intermediate phase you receive that via email…

R4 Yah and he does it the same with…with your sports with the soccer and with the netball he forwards it to the organiser and then you know exactly what's going on.

I *You mentioned err WhatsApp groups. Is the WhatsApp group only used for the staff or is it used for other stakeholders in the school?*

R5 Err it's (clearing throat) not only used about this with err for this staff, even the parents from grade one to grade seven, each grade has its communication with its parents in case a child is going to be absent or you're giving up scope or you're not sure whether the child is ill or something, you are able to communicate with the parents on that. So it…it is a good thing I would say it's…it's a communication that we have an everyday life communication we have with the parents until the end of the year and it helps a lot because if you have a problem then and there you just send a message to the parent if their parent is free, he or she will rock up here at school and then you solve the problem.

I *Anybody else?*

R2 Can I just add to that err as far as I know we have like the junior phases got a err…err WhatsApp group, the senior phase has got a WhatsApp group err and I'm sure the SGB

R6 Yes they do

R2 (continuing) the SGB also has a WhatsApp group so they… they communicate through that but with the WhatsApp group, err when we have a problem with a parent or a child, we don't send the child's name on the group we'll obviously send it individually to the parent so that if something happens that the whole classes' parents don't know but just that parent.

I *So you protecting the learner…*

Yah…yes…yes (most respondents)

R6 And the parents very often err they want to know who the culprits are and they want to name and showing them…

R4 But we don’t allow that yah.

R6 So it's not allowed.

I *Is that part of your school policy? Perhaps*

R6 I think it (hesitates) I think it is

R5 Yes it is because we need to protect learners even if we have the projects we not allowed the SMT even us we do understand that we do not have to show their faces because grooming a child does not have to do anything with shaming the child because you are building that person. So if you are going to break that person that is not going to happen.

I *Okay*

R1 What I did with my WhatsApp groups, if I put a privy…private privacy setting on it so where the parents cannot post anything on the group only admin can post on the groups. So it's only there for my use. I post whatever is necessary or regarding the class. I'll post in the group. And if a parent wants to say something, they sent me a personal message via WhatsApp. So my group is closed. Err I don't know about the other teachers that are there because what you used to have is you had a message sending out to the parents and every single parent in that group says thank you. Thank you ma'am. What’s…ugh a thumbs up so this year I decided I'm closing my group because it's a nuisance. It really is. If you get your phone and there’s 30 WhatsApp messages just to say thank you. So I closed my group. So no parent can actually send any messages on the groups. So I think with that you're protecting the children as well for naming and shaming purposes.

I *Okay, your'll mentioned WhatsApp. Is there any other social media platforms that your principal advocates at the school besides WhatsApp?*

R2 We have the principal doesn't err mmm physically do. We have err mmm two staff members that work on Facebook. Err mmm so we try to update it frequently but because it's so busy at the moment, it's not fully functional if I can say like that but if there is anything important he will WhatsApp the teacher or leave a note and say, please put this on Facebook. Please remember to invite the parents or notify the parents that on Facebook so if they don't have WhatsApp or whatever they can always just you go on to Facebook and…

R6 We also have the D6 communicator but I don't think that's being utilized…

R4 To its full potential

R6 (continuing) definitely not because the only thing that are actually see that is updated is the newsletter that appears every week but...

I Could you explain further what that platform is that you speak about.

R6 The D6 communicator is an app that you download on your phone and err the parents obviously they can download on their phones and err there’s even space where you can

put homework up err the calendar about what's happening during the month, a year whatever and err then special notices like the newsletter letter, the parents can see that but I don't think we are utilising it.

I Going back to the Facebook page, the principal is the initiator of it. Is that what you were saying …

R2 Err…actually, we started…we started Facebook not to communicate with the parents but like today we have a fun day. So it was for us to put pictures up for fun days or sport happening or err honours assembly or stuff so people can see that err our children are that so we can promote the children for that but now with a new rule coming out that you're not allowed to take photos of children and posting them on social media without err mmm parent's consent it is more difficult to do that because obviously if you take a group photo of a child and a mum in that group says you my child is not allowed to be posted err mmm it makes it more difficult for us to because I'm in the senior phase and she's (looking at one of the respondents in the focus group) in the junior phase so if I put up a picture of lets say juniors and seniors together and her child her mum's child said, the child's not allowed to be on there…so it makes it more difficult at this stage to…to do that.

I *But would you say that the principal regulates what is put on Facebook?*

No, no, no (most respondents)

R6 Actually, I'm err going to be honest. We have a bit of a communication problem from the principal and the SMT because they decide stuff without (background noise) consulting the teachers and we just hear about it err mmm so communication is actually err a big problem in this school.

I *The Facebook page. You mentioned that you put up things, events so would you say that the purpose of your Facebook post is to promote your school or some other purpose*

R2 Um…I think we…we would like to promote obviously you have to promote your school because you have to be proud of your school err mmm but also I think it's for we have a lot of parents that work day shift or nightshift so in like on a Saturday if she worked night shift on a Friday she's not going to be at school to come and watch her little one run whatever the case might be so err mmm that was that when we could do it was nice to put on Facebook for the parents to see okay yes…see the school's doing this or the netball girls did this, the soccer trials but now with that regulation it's we are actually kind of stuck in that kind of sense where we can't really do it anymore.

I *So how do you feel about that regulation?*

R2 It's frustrating. It really is

I *Can you explain further. Why?*

R2 Umm…like for last year our netball teams did extremely well in like err mmm how many years about

R5 five years

R2 five…six…years so we always fell out early like in the…

R5 the tournaments

R2 (continuing) the tournaments and last year we had four teams going through. So that was amazing and we put those pictures up. But now this year if it happens again we'll just have to say congratulation girls and you know, and we can't put those…those photos up.

R5 And another thing that is err our principal tried to promote is for us to be able to upload our assessments so that the computer can just calculate statistically everything for you and gives it back to you so that you don't sit down and work it out and to us that are BBT's…Born Before Technology (laughter) it's…

R4 Frustrating

R5 (continuing) it's a challenge but I'll just like to commend the young teachers that are here. I am of them and she (pointing to a respondent in the group) is the one whose always there to help me. if I can attest now, there are too many things that I'm doing on my own on my laptop because of her, even if it's Mathematics, she doesn't teach Mathematics but she takes me exactly to where and I will not forget what she has shown me. The thing is, the principal has this vision, but he does not have the implementation way. So you have to implement it to your way. So my implementation is to take Miss (name of respondent in the focus group) to be my mentor at that age. She is my mentor and I'm so proud of her. I do everything in the technology because of her in these computers. I do everything because and she's the best.

I *So I just want to ask the uploading of assessments are you talking about the SA SAMS program.*

R5 Exactly. So that you get everything (clearing throat)

R4 I can only say Mrs (name of respondent in the focus group) also helped me. I also used to struggle and Mrs (name of respondent in the focus group) used to come and (name of another respondent in the focus group) Miss (name of respondent in the focus group) also…

R5 The young ones are so good.

R4 (continuing) and they were never ever ugly to us or anything…they just showed us and they helped us and we managed even Mrs A (pseudonym) helped me and I learned a lot from them. We teach each…each other.

I *I want to know, is the SASAMS at this particular school only used for assessments or does the principal use other modules of the SASAMS*

R5 Everything is done there. The registers…

R4 The class lists

R5 The class lists

R4 The profiles

R5 Demerits and merits, absenteeism. All of it. It's done there.

I *Okay. I now want to tell you about something new. I would like you to listen very carefully and then I'm going to ask you your views about it. It's called Digital leadership. Digital leadership is about establishing relationships, influencing others and initiating change through the use of digitals. It involves new behaviours and new skills of school leaders who use digitals to change the school's learning, and teaching culture to a digital one. Digital leadership connects school leaders with their peers, experts in education, staff, learners and parents through digital tools and social media platforms. Digital leadership enables learners to learn collaboratively beyond the classroom walls in connected online spaces. Now, some of the practices of digital school leaders include creating an atmosphere that inspires innovation through digitals, fostering collaboration by leading digital partnerships, being open to new ideas through distributive leadership practices. In other words, letting go of some of the leadership to level one teachers as well as SMT, providing adequate Ric... resources by encouraging students to use social and networking education technologies, taking risks, to build digital capacity of teachers and having a visionary focus where work is focused on student learning for the 21st century. So having had heard all of that, what are your views on this concept of digital leadership?*

R6 I'm very excited about it because I've been for that for long err mmm but practically and it's not able to do that because we have we don't have internet. There's only internet at the office. So I'm a Natural Science teacher and I download lots of stuff from the internet, videos from YouTube that explains this stuff much better to the children err mmm and experiments that I can't do they can see there but I have to use my own data, my own money to download that err mmm and that is at this stage the biggest problem and then the second biggest problem is err mmm when we I asked if we can't do our err mmm assessments that has to go in for post moderation Ag pre no moderation, if that can't be done digitally so that you know you do it you send it (background noise) email it to the HOD, she corrects whatever or make comments, send it back to you. Err mmm and then we I get lost with paper. That's why I love technology and err mmm the older I'm one of the older generation myself, but I decided I'm not going to let that my children mustn't know more than I do. And mmm the older generation is very difficult to fall for that.

I *Anybody else on digital leadership…*

R1 Yes, I'm also all for it. I have a dongle in my classroom which is my own so when we do a theme I'll put a video on live stream it out of my pocket, but how can we implement it if…if there is nothing for us we cannot you know you I do it because I have it but my next door neighbour doesn't have it. So it's…it's excellent but we don't have the err…

I *Infrastructure…*

Mmm (affirming) (most respondents)

R1 (continuing) infrastructure …we don't have it. We don't have it. We had Wi Fi. It was taken away

R5 without any notice

R1 (continuing) without notice. It was just cut off.

I *Do you know perhaps know why?*

R1 Umm…

R5 No

R4 Yes, yes…Mr B (pseudonym) said

R1 *It's too expensive and…*

R4 cause people went on Facebook and all of that…

R6 And download things and...

I *So was there a misuse of the internet?*

Yes, Yes (All Respondents)

R1 So and there isn't enough funds to put a firewall to block Facebook and Twitter whatever there's…not there's not money to err ugh to put in that firewall so it was just cut off so we have two computers, three computers yes (everyone talking together) and a fourth for your own laptop, you can put your own laptop in that is the use of internet we have at school so if you want to do something digit and we most of our classes has whiteboards and some of the classes even have the…

R4 Eduboard

R1 (continuing) eduboards, the interactive boards but we cannot use it if we don't have all the infrastructure. So it's…it's actually frustrating…frustrating to have that but you can use it to its full potential.

I *Tell me the Facebook and Twitter that you mentioned just now was it used for private use or was it used for…*

R6 Unfortunately

R4 No, unfortunately the educators use that as a private…

R6 And I know one day I when I sat down someone was downloading Dragon Ball Z and a few children I mean story programmes, nothing to do with education or anything so yah.

I *Your perception on digital leadership? (looking at other respondents)*

R2 Umm…I'm all for it but unfortunately with the children that we have at the school and please don't get me wrong. We're not a poor school but we do have children that comes from the like rural areas, okay, so they do not have smartphones or they…they do not have the facilities to do work on internet or if they let's say they have to do a research project, okay, I have children that's parents don't even have don't have a smartphone or they don't have access to any internet. So I you have to, when you do this, you need to, okay, if you prepare something, you either need to give all the children the same information which…which you have to go and look for and give to them or you need to make a plan to say, Okay, well, we'll have to go to the library, which err (laughs) who still uses libraries? Do you understand what I'm…where…

I *Yes*

R2 (continuing) so it…it is difficult. It would be ideal to have to have this amazing platform where children can go and research themselves but I just don't think at South Africa as such has gone the…the technology and the infrastructure all over to be able to do this…

R6 Yes

R2 (continuing) and load shedding with that as well. So I have a whiteboard which I which is amazing because all my work is on my laptop but when load shedding hits us then I can't do anything because my work is on my laptop.

I *You mentioned something very interesting. In other words, are you saying that these a digital divide between learners in your class.*

R6 Yes

R2 Yes

I *And how… how would you describe the divide? Is it a massive divide?*

R2 Yessee, Errmm I haven't we haven't gotten to the stage where I can actually say okay, well this child can't do it or this child ... when I sent out the WhatsApp letters to the parents, err there are about ten children in a class that parents…that the parents don't have smartphones if the parent doesn't have a smartphone err mmm what is the chances of the child having a smartphone to do it so I would say there's about you can say a third of the children that...

I *And you attribute that digital divide to… (back ground noise)*

R2 (sighs) wat…income…like…the

R6 Lower income

R2 (continuing) yah the lower income…income people this and please don't I'm not judging it all it's just you have your parents that that can afford it and you have the parents that that can't afford it.

I *Tell me…tell me the digital divide does it extend to the staff as well or is it just the learners*.

R6 Mmm the staff definitely especially the older as I say the older generation, they are scared of technology and they don't want to the one teacher that resigned Mmm went on pension the other day bought a laptop and it's three or four years old but it's brand brand brand new she… It looks (laughter) as though she never set it up at all and she bought it so that she could use it in the class but she never did (laughs) the closest I saw her working with it was when she played a video for the concert so that the children could see the movements but err what I also my son is in South Korea and there they have free Wi Fi all over its in if you whether you in the flat or walking in the streets the Wi Fi is free, so that would be wonderful but that's not that's not possible. But what I also do with with…my children with the Science I try to encourage them to go and look on the internet about certain topics, but you know there are some goggas creeping up on the internet too. So I've told the children about Kindle where they which is a child friendly Google, Aga is from Google search engine.

I *When you speak of goggas in the internet, what are you referring to?*

R6 Mmm porn adverts coming up, the children I mean they are because we are doing the seven in life processes and if they reproduction…there it is

(laughter)

R6 Mmm so yah (laughs)

I *You mentioned something interesting early on. You spoke about getting assistance from your peers and be talking about digital divide amongst your staff. Do you only get assistance from your peers within the school or do you get assistance from outside the walls of the school as well.*

R5 No, I haven't gone outside but I what I can say is, if it's not my peers here, even my learners and I love it, when I give my laptop to them, and they sit next to me, and they show me mam if you want this, you go there and it's on my whiteboard and they show me and they show me sometimes I don't feel eager to go and disturb her (looking at one of the respondents in the focus group) when she teaches and then when I get stuck I just say, Okay, my children. Now I have a problem. I cannot go further than this. Who knows how to work with laptops and everybody and they will come maybe you would think I'm joking when I say I joined Facebook, I think that was four years ago though I'm not on it that much. But it was downloaded for me by a learner (laughter) at break time. The (name of learner) child, she came and said mam with such a beautiful phone you only have message and receive (laughter)
no mam sit here I'll show you and she did everything she taught me and I was on Facebook and I was on gmail if I have a new phone I just take it and say Miss (name of one of the respondents in the group) its new (laughter).

I *So you learning from peers, you learning from learners…the digitals*

R5 Exactly

I *So is there any other platforms outside the school? Maybe your CIF's, your PLC's where you can learn about digitals and how to use it.*

R5 Yes, the technology while I was still teaching Technology but now I gave it to a new one because she's good in Technology. We…we were in this privilege of having these trainings at UNISA yes we were paying, the school was paying and even during holidays we would go there for a week and be taught amazing things according to technology and then you would be able to do certain models that you have to demonstrate to learners because you've seen them through the teachings so the Department of Education especially the Technology department of the Gauteng West is the best I would say it is the best they cater for their teachers especially the BBT's.

I *Are you allowed to ask for training for example in your IQMS PGP's?*

R5 Yes

I Have any one of you indicated on your PGP that you want that type of training?

R5 Yes, I think then I did not even have a laptop. I did not even know how to draw just a simple table on the computer. Then the principal was still Mrs Z (pseudonym) and there was a young lad…

R6 (name of person)

R5 (continuing) yes, Mr (name of person) (back ground noise) he offered to teach us that's when I started getting interested in laptops, you know, in technology because I don't want to lie before then I was just that old teacher who had nothing to do with computers, even phones. If I receive and that's it. That's not a problem. But after the trainings that we received from Mr (name of person) then, I started getting interested and until now that I can do almost everything on my laptop and my phone by learning I've have never been to a an institution where I pay for technology lessons never. It's been the district, Miss (name of one of the respondents in the Focus group) and Mr (name of a person) that's it from (name of school).

I *Okay, who else beside the principal has opportunities at this school to practice this type of digital leadership in any form.*

R2 (laughs) Err mmm

R6 I think (name of person) but that's more for capturing marks…office (most respondents talking together)

I *So who is this person an administrative staff?*

R2 It's the secretaries…they all have err

R6 One…well just as technologies

R2 But no (name of person) also does most…she emails all the people she does all the… (name of person) does the like the advertising and stuff but (name of person) does most of the…

R6 I know…cause I know…

R2 The electronic things

R6 Cause (laugh) that's why she says she doesn't use a smartphone she's not enough for that.

I *So those people that you have described just now that you say have opportunities to practice digital leadership, can you describe some of their digital behaviours.*

(silence)

I *Perhaps their actions…*

R6 I think they limited to what…what is available here at school and can't really go further than that.

R2 Look Mrs (name of person) she does most of the when something needs to be organised so she does the…what is that the six communicator she does that. She does most of the SA SAMS capturing of new learners, capturing the registers, the absenteeism all of those…

R6 Merits and demerits

R2 (continuing) merits and demerits so she…she works a lot with the…the internal affairs of the school and then Mrs (name of person) she is the one that if you she is your go to girl if you need equipment or if you need anything, she's the one that contacts and organises everything for you.

I *Okay, now I want you to take a few minutes and think back over the past couple of years of the way things were done at this school what particularly has improved or what is perhaps not improved since digitals such as your SASAMS program, your Facebook, your WhatsApp, your D6 what has either improved or not improved since these digitals were introduced to the school. Please tell me the positive and the negative experiences…experiences you have had with these digitals at your school.*

R6 I think look on the WhatsApp group mine is not on that setting that you are talking about. So, you know I sometimes get very frustrated with the parents (sighs) because they I can see why the children can't answer you properly because the (laughs) parents don't read and because they would something that you put on just now they would ask something about that but it is in there. So, it that part is very frustrating and the complaints and that's why I think I…

R5 They share appropriate pictures and also the messages.

R6 Accidently

R5 I don’t think…sometimes I don't think it's accidentally because the minute you go to this WhatsApp it's written 6B, 6L, I'm just making an example but now because last three days back we received an image of one of the daughters and the boyfriend straight on this and now you like…

R6 Mmm (affirming)

R5 (continuing) how did this happen and the person who did that did not even apologise because if you’ve pressed a wrong button there and there you delete it and you apologise. It's still here, it's still on my phone and I went and called the child and said who's this…and the child said it's my brother and the girlfriend that's all and I was like okay I'm okay is this your family? Okay I just wanted to know because it was under a certain child and that parent. did not come back to me even now. Now we it's a week and some days it's not nice because sometimes they WhatsApp you at ten to eleven

R1 Mmm (affirming)

R5 At night

R6 Or five o'clock in the morning

Mmm (most respondents agreeing)

R5 Can I do this homework?

R1 Yes

R5 They miss use the use of

R2 Technology…yah

R1 So the positive part of WhatsApp is the communication between you and the parents. That improved drastically. I mean, you sit in a class, you have a child who's disruptive. You take your phone and you notify the parent, they are you have a track record of communication between you and your parent, your parents that that that's a positive but the negative is you get parents 11 o'clock I had a parent who smsed me I think two o'clock in the morning and it actually woke me up that morning and she could see that I have read it, that next morning when I woke up I deleted her from the group and I told the group that this is unacceptable and I didn't know that you could block the group and this year was the first year were I decided I'm blocking this group and sometimes you feel err you want that more communication because you want the parents to acknowledge what you're saying. You want to see them Yes, yes, yes, yes. Thank you. Thank you. You don't want to see it. But you want to know that they…

(inaudible)

R1 (laughs) now you have this silent group where nothing is happening. It just me is happening in that group. But you could see when you look okay being delivered to

everyone, it's been read by everyone. They are on track and I say it also lessen the parents being a nuisance really they are not so free to just type…

R4 They take each other on on the whatsapp group they might

R1 Yes

R4 Just speak to each other and take each other out you know and then you are in the middle of the whole thing.

I *Okay. Besides the social media platforms that have been introduced in this school let's go to SASAMS. Has that management system in any way improved the lives of teachers?*

R6 No made it much more…worse…

I *How so…*

R6 Because we have to now I have to go down to the office previously I captured my marks on my laptop. Now I have to go down to the staff room, I don't have. I've got 3 admin periods in a week when and then I have split up children so I can't go down in school time to capture my marks. That is a big problem.

R5 Or maybe there's somebody already occupying the computers and now you can't… (inaudible)

I *So would you attribute that to a lack of devices.*

R1 Definitely (most respondents agreeing) yes if we had Wi Fi and we had a network

R6 Network, yes (inaudible)

R1 Where you can connect to SASAMS in your classroom then wow you could sit in your classroom you can quickly read in your inbox you connected to the network you on Wi Fi k

(inaudible)

R1 Now unless you have admin time where the foundation phase don't have a lot of admin time then you come into now I sit in front of the computer (name of person) and Mrs (name of person) now Mrs (name of person) is waiting because when must she…this is her only free period she must read in the marks. Okay so (name of person) in the office is open to reading in our marks so that makes it but you as some teachers I want to sit there and I want to capture the mark and I want to see the result I don't want someone else to capture it for me but there is for, like Mrs (name of person) the older teachers they're just send the marks down to the office so that (name of person) because they struggled to record it but yah if it the lack of

R6 Its actually…not

R1 (continuing) the lack of infra structure, the lack of Wi Fi, the lack of network …if you can access it to your classroom…

R6 If we had the network extended to the classes where you plug in even if there's no internet you know, you plug it in and yah

R5 Just for the …SASAMS even if its SASAMS controlled it would work.

I *So SASams has not really lessened the admin work*

No, no (chorus)

R6 It actually worsened it.

I *In terms of communication, has the paper being cut down in terms of how communique goes out?*

No, no, no (chorus)

R6 No because we have to, let's take our admin ugh the…the assessments, for instance, language teachers has ten assessments per term so first you have to send the paper, you you work out your assessment out, print it, send it to the subject head to see if the subject content is fine. Then she sends it back to you. It goes to another teacher for the language content. She checks that if there is something wrong, you have to change it, print everything out and send it to her again to approve then she sends it to the HOD and then the HOD will send it back to you then you still have to put the assessment in a file send it down to the office to be copied and sometimes you wait very long or you get your copies aren't the way that you wanted the copies to be done and then when the children have done the assessment, the marks has to go the written marks has to go to the HOD for both post moderation and only…

R5 You still have to go and upload them on SASAMS and then print and take to her for maybe perusal and after that for SBA you see it's still too much paperwork

R2 but…but coming back to your question err the paper trail for some of the communication has gotten less okay so as Mrs (name of a respondent in the focus group) said so instead of printing the memo for the whole school if she's part of netball and I'm part of netball, Mrs (name of respondent in the focus group) they don't have anything to do with the netball so he only emails it to us. if you like I'm the only technology teacher. The whole intersen phase does not have get my memo. He emails the relevant stuff to the relevant people in that way the school has saved on paper but then you get the…the we have to print five things five different times when you're that is the communication level is less but now we're using more paper to accommodate that.

I *And notices to parents how does that go out.*

R2 Err you…you

R6 Newsletter

R2 There's newsletters and then obviously if you need to see a parent we used to we used to we still do the do the junior phase…

R1 Formal letter

R2 yah you send a formal letter

R5 (inaudible) Even in the senior phase…the dear John

R2 but with the WhatsApp it's become so if ok so now I need to see a parent instead of sending a letter home I call the parent or I sms them saying listen you need to come and see me because I know for a fact if I send a grade seven boy that's failing a letter to his parents, is that letter really gonna be get to his parents I rather I'll phone the parent and I will WhatsApp or message her so there is a paper trail for me to see okay here is what happened the letter that I sent did not get to you so this is my proof that I've sent it.

I *Does the school have a website?*

R2 Yah

I *What do your'll post on the website?*

R2 (laughing)

R6 Don't know

R2 The website was under construction for (laughing)

R6 A long time

R2 Quite some time but it's just normal things like who the teachers are, the school fees the activities at school I think the website at the moment…

R6 Code of conduct

R2 (continuing) is standing still (inaudible) yes

R5 And if I can recall back maybe before the young teachers were here Mrs (name of a respondent in the focus group) and Mrs (name of respondent in the focus group) are going to remember we did have a rule where we allowed learners to bring cell phones to school because then it was just the introduction of technology at schools (looking at another respondent in the focus group) do you still remember and we also had computers a computer lab before they were stolen and then (laughs)

Gauteng on line (chorus)

R4 Gauteng on line was not online

R5 (continuing) took them back and then we were given tablets by that tablet time learners were allowed to also use cell phones if they have data you know too (inaudible) to for information but what happened we had to stop it at school because the goggas that that she is talking about kept on creeping especially in the senior phase while you think that you helping them to find information certain information others are not they (interrupted by another respondent) they are sending pornographic to each other.

I *So you say it's an issue of theft and an issue of misuse of the internet.*

R5 Exactly….yes

I *Okay, now I want to come to the actual teaching and learning part, you've mentioned a lot of devices, you spoke about tablets, you spoke about Gauteng online, you spoke about internet, cell phone usage. At this point in time what digital tools or platforms does the principal advocate for use inside the classroom for teaching and learning*

R6 The whiteboards

Whiteboards…we only have the whiteboards (most of the respondents)

R2 Umm…every year he has these amazing ideas okay so he…he like during December holidays he goes through the internet to look for websites that we can use as teachers to…to help people in class but as we have the challenges where don't have internet access or whatever the case might be so

R6 (whispering…excused to go to the bathroom)

R2 (continuing) so we…we struck we can't the the websites are amazing the children can work on it we can do homework on it but if we do not have the…the opportunities or the infrastructure to do it and the children can't do it at home then that amazing thing cannot it's…it's good to look at and to put it on paper and say okay this year we're going to do this but if you can't implement it, it's… it's useless.

R4 It's no use.

I *So you only have the whiteboards, do you perhaps use projectors at this school*

R4 Yes we do

R2 We've got the interactive whiteboards, some classes not all of them but like in…in during December holidays four…

R4 Yah mine was stolen

R2 Four

R4 Two, three were stolen

R2 Yah okay three or four were stolen out of the classes…

R4 And then I took the others out that doesn't have burglar proofing so we can't do anything.

I *Err besides your interactive board and the internet connection that you would use in a classroom do you perhaps offer at this school other platforms such as Google classroom, class dojo.*

No. no, no (some of the respondents)

I *Is that is there perhaps a reason?*

R1 We don't have the infrastructure

Infrastructure (chorus)

R1 We don't have that

R5 Mmm because even the WhatsApp that we're using and even the emails that we receiving from the principal we use our own data to open that because we do not have internet at the school, you get sent this and then you still have to go and buy your own data to read that message.

R4 What's going on there….Yah

R2 I think (laughs) it keeps it keeps on coming down to…to the internet but what (laughs) and it sounds like we really it's like errrrrr….

R5 It is

R2 (continuing) but it really is that way, if we if you want to cope or adapt to your environment, in the social environment, you have to have the stuff to work with and you can go on to the Google classroom and all those things but you cannot do it if you do not have the…the money or the like Mrs (name of person in the focus group) uses her…

R5 Dongle

(Respondent 6 returns from the bathroom)

R2 She got the dongle to do it, to use it in class, Mrs (name of person) uses, she uses her own thing. I hotspot from my phone, at the end of the month my, my, my account is…

R5 Your bill is too high.

R2 (continuing) is sky high.

R1 That one core ingredient is missing and that is we don't have access, we don't have access that's the thing we had access we could use it. We have teachers who are more than willing to learn and to adapt and do it but we don't have access so our hands are cut off.

I *Okay. You've mentioned a lot of challenges all of you, how does your principal support all your digital challenges in your classroom?*

Work around it, we work around it (All respondents) (laughing)

I *Can you elaborate.*

(inaudible) (laughing)

R2 When we say we have…this can't leave the room… (laughing) when we say we have a challenge

R6 Read there… (laughing)

R2 When we say we have a challenge it always comes to (some respondents whispering) we will work around it so for us, you can't say okay, I want a solution please. This is my problem. I cannot show my children the technology videos because I am not…

R4 Technology oriented

R2 (continuing) or I cannot where must I find the time or now I have to come here to download but Mrs (name of respondent in the focus group) is busy Mrs (name of person is busy Mrs (name of person) is trying to figure out SASAMS (laughter) how must I do it then the principal will say…

R4 Work it out.

R2 (continuing) I'll make a plan

R4 And that's it.

I *Does he make a plan?*

No, no (all respondents)

R2 Okay

R6 Does not want conflict (laughs)

R2 He wants to make a plan but now when it comes to money then the SGB says no okay I understand it's expensive to run a school but hear us out put a block on the websites that you don't want us…

R5 Mmm (affirming)

R2 (continuing) to go to but we need the internet access to do the work that you want us to do.

I *So does the funding only come from the SGB or does the school is the school allowed to get funding from the department.*

R6 Mmm

R2 We do

R6 We don't get funds for internet, we get for books, textbooks, LTSM.

R2 Yah but you…

R4 But that's what I don't understand, (name of a school) err I heard they are totally digitalised they do everything with laptops, with iPads they even write the exams with on a cloud or something named cloud I don't know…I don't exactly know what it is but I heard they got funding from Gauteng department because I asked the guy now how can they afford it we can't do it now how did they get there, are their parents rich what's happening how could the whole school been…be digitised and they said they said to me know the department they motivated it and the department sponsored them so can't we motivate it for departmental grants or whatever the case may be.

I *Does your LTSM allow you to procure for digital devices*?

No, no (All respondents)

R6 Because they run short even with the textbooks they the school has to (inaudible) half of the money you know what the government is giving we have to add on about the same amount from the school funds.

I *The procurement that you do for your school from LTSM perhaps comes from a source like a needs analysis tool is that needs analysis tool populated by educators?*

R6 Yes, we are busy at this stage.

I *Are educators allowed to populate on the needs analysis tool e-textbooks rather than hardcopy textbooks.*

R6 Sorry I just want to I don't think there are any e-textbooks for primary school for high school yes but I've I went and searched and you can't find any the only one that is digitalised is the Natural Science workbook that's the government gave out in 2013 and…

R4 I think I the DBE books also are online.

R6 Yah, I think they are but I mean.

I *So you saying that the teachers don't request for e-tools or e-textbooks because it's not available?*

R6 That's the one thing I know for a fact if I would say that I want it they will say there's no money.

I *Is your school allowed to apply for virement for your LTSM procurement where you can indicate that instead of a textbook you need a tablet. Is your school and have that policy?*

No, no, we don't know (some of the respondents)

R6 I just know when we had the tablets the problem was where to store the tablets where to charge the tablets.

R1 Didn't we have the tablets and it was stolen.

R6 Yah

(inaudible)

R6 They took it, the Department took it back but the school paid a huge sum of money for a person to err…

R5 Install charges and (inaudible)

R6 It's like err trolley stand

R2 It's called charging cow.

R6 Yah

I *So charging station…Do you perhaps know why the Department took your tablets away?*

R6 No one knows

R5 They never said

R2 There was something faulty with the tablets.

R6 Yah, it was. The problem is it was Wi Fi tablets. If you don't have Wi Fi, they are useless. They can't go onto the internet.

I Okay. Is there anybody else who wants to add anything with regards to that?

No (all respondents)

I *Suppose you had one minute to talk to your principal on this new digital leadership practices, the topic of today's discussion, what would you say to your principal?*

(laughter)

(inaudible)

R6 I'll say one sentence we want access to internet

R2 Internet…yah

R1 Yah

R4 Infrastructure

R5 Exactly, exactly

R1 We just want Wi Fi

R6 Because at this stage I'm using my uncapped internet for school work.

I *Okay, suppose from all the things that we discussed today in the interview, is there what to you is the most important thing, that we've discussed today, personally.*

R2 (clearing throat) I think personally for me is it would be amazing for my children to be to be able to go home and sit and say, Okay, if I say go and research Jaws of Life, tomorrow, you come and tell me what how hydraulics work and how does the jaws of life work? That would be amazing, but I know some of my children will never ever be able to do that.

I *Why?*

R2 Because of their environment.

R2 *You care to elaborate on that*

R2 Just the social economic like the people that we the children that we have that come from different home…living environments that some of them as I said come from…

R6 Especially lots of immigrants

R2 Rural areas and

R5 Some are very poor. Some are…

R2 Yah, so we have the children that will never be able to do that.

R1 They don't have access.

R2 Yah

I *Anybody else what was important to you in this interview.*

R6 I..I what I really my big dream is to have all the teachers admin must be digitalised because I am bad with papers I get so mixed up amongst papers, but on the and I think there are many children that feel exactly the same because I have ADHD.

I *Okay*

R6 So that's a big problem.

I *Does your paper work eat into your teaching time?*

Yes, yes, a lot (most of the respondents)

R6 Very, very much

I So you saying if it was digital, you would have more time for…

R6 For teaching

R4 For teaching

I *And with that perhaps impact in the classroom…*

R6 Definitely

I How so…

R6 because you will have more time

R4 you will have more time to the children to be good to communicate with your children because papers come unexpectedly then you have to sit down and you have to give them work to keep them busy and you have to fill in the paperwork and and then you get irritable with them and it's actually not their fault it's…it's the structure you in coming all comes from above.

I *Okay, Is anybody else want to say what was important to them in this interview.*

R5 Now the only thing I could say is just as Mrs (name of respondent in the focus group) was saying if we can be listened at sometimes at what she was saying digitalising your assessments and really it would be so nice to get it back so that we can learn more to get it back on my email though its going I'm going to use my own data and then (laughter) fix it and then email it back it would it would make our lives so easier because now most of the things that we're learning you Like I never thought I could do this and it's so easy yes as a BBT I still cannot see myself marking a test over that
it will take time (laughs) but you're open you open today and to new things and it shows that life is changing it doesn't revolve on what you knew you need to be to you need to go according with time

(inaudible)

R4 It's nice if you can go and (inaudible) for me it's I feel good if I can go and sit in front of the laptop and I can do it myself but I couldn't have done it before. So now I know if you go there I can do that. If you go there I can I taught myself most of the things and with the help of my colleagues.

R5 It’s good

I *You said you want to be listened to, can you explain that a little bit more?*

(Inaudible)

R5 (laughs) Sometimes? I would not even say it's only here at school that if you are a post level one teacher, it's like you have a limited set of mind.

R6 Mmm (affirming)

R5 You cannot think beyond or out of the box. The only people that know are those who are above you.

I Is that your perception?

R6 No (laughs) I think its most

I *So you saying that the mind set of your senior managers differs from what your own capabilities are…*

R5 Exactly forgetting that we are the ones who implement whatever change that they sit and decide because when they decide something up there it's going to infiltrate on us…

R1 Boil down to us.

R5 It comes to the SMT, What does the SMT do? Takes it back to the teachers who's going to implement it…(whisper)

I *Have you level one teachers ever been involved in decision making processes in terms of what digitals are implemented.*

R6 No

R1 No

R Never ever

R1 No

R6 What I said right in the beginning, communication is a big problem. One thing that I just want to say this is what she says about the time issue. I mean, if I send my assessment to the HOD now, and she opens it sees what's wrong. I mean, within ten minutes it can be at the office ready to be printed. But now it's a question of when I get time to go and look in my pigeon hole if I got it back, then I’ll get it when she has time to go and look in her pigeon hole or you know, it's everyone has to wait and wait and wait.

R5 And if she receives it there and then I have made a mistake she can just correct it there and then put it in her CPTD that she helped me with my assessment (laughs)

and it's not an issue.

(silence)

R5 Sorry (laughing)

R6 (laughter) So many questions…so little time.

I *Before we conclude, is there anything that you would like to add that maybe we missed out.*

No, no (all respondents)

R5 I think you touched everything.

I *Okay thank you for your time and your participation.*

INDIVIDUAL INTERVIEW AT SCHOOL X

DATE: 2019-02-18

TIME: 19H00 – 19H30

PLACE: Principal's Office

I *My name is Judy Dasruth and I am a researcher. Thank you for participating in this research project. Every effort will be made to protect your confidentiality and privacy. Since no names will be used that will allow you to be identified. Please be comfortable and feel free to express your views. I'll now proceed with the interview. In this interview the word digitals will be used instead of technology as digital extend beyond technology such as e- tools, devices, gadgets, applications, management systems, products and processes that we use to simplify our daily lives. Digitals extends our abilities and solves problems to include a focus on behaviours and practices that arise from the use of technology. Sir please describe your leadership practices that encourage digital use at this school.*

R1 Okay, firstly thank you for the interview. What is extremely important especially as far as this question is concerned. Presently, in Gauteng West, Circuit three, Cluster three is a pilot project for the use of digital technology. We are using presently we are using the dashboard, which enables us to run the day to day curriculum aspect and other aspect as far as the school is concerned. That is one important aspect as far as digital use is concerned. We cannot err actually run the school effectively if we do not use any form of err technology. The sec second aspect that we use on a daily basis is the SASAMS err as far as the attendance of educators is concerned, err, curriculum management annual teaching plan, err, and… and so forth, including also to track the err performance of learners, attrition rate err, and and so forth. So today it is extremely important that without technology schools will not be able to run effectively.

I *How does the leadership practices that you have described influence the day to day running of your school?*

R1 Look if we do not err, utilize what we are supposed to in terms of err digital technology then we will def definitely not be able to (inaudible) not be able to track the most important aspect of the school that is the curriculum management. Err, we are able on a weekly basis to track curriculum management, err, watch attendance, err, look at the assessment and, and… and so forth.

I *I would now like to tell you about digital leadership. Digital leadership is about establishing relationships, influencing others and initiating change. Through the use of*

digital tools. It requires a dynamic combination of mind set, behaviours and skills to change and or improve the schools digital learning and teaching culture. Digital leadership connects leaders with staff, learners and other stakeholders through digital tools and social media platforms. Digital leadership allows for learning to take place beyond classroom walls, in connected online spaces in order to facilitate digital age learning that is relevant for the 21st century. What are your views about this type of concept of digital leadership?

R1 Well the manner in which schools are run is not like 20, 25 years ago. Firstly we are in the fourth industrial revolution. It is extremely important that schools and principals embrace this technology. Otherwise there's no way you can run a school or equip our children for the fourth industrial err…industrial revolution. That is why the manner in which principals will be appointed in future would be based on competency, the ability to use it to utilize technology, understand technology, err, and, and so forth. Today's schools are run completely, err, with the abili…with the use of technology and presently in our schools we are using SASAMS and if a pr…principal does not have knowledge of SASAMS the latest version, there's no way you can manage the finances of the school, the curriculum of the school, a…assessment reporting daily incidents and so forth, to such an extent technology is so important that each principal in Gauteng has been provided with the latest cellphone to inform the Department, err, of incidents in the school, err, to keep abreast, err, with everything that is happening, circulars, messages, all that are handed to us in a complete different way, unlike a few years back.

I *How has your digital leadership practices affected your school's classrooms current digital environment or look?*

R1 Look, it has in a lot of ways. Just one example is the dashboard. The dashboard clearly indicates how far curriculum is being delivered in the classroom, assessment is being delivered, the performance of learners is monitored, remedial action is taken. What is extremely important is that using technology we can go immediately into the classroom and find out as to the reasons as to why learners are performing poorly or the educators are not teaching the way they supposed to teach. Also what is extremely important, the manner of just getting down with textbooks like what we should do a few years back. This has changed with power points err…using the Internet where educators can, err…interact with different forms of media and so forth. Which is also important is the ability of learners to use tablets, err, and other devices to enhance their, their teaching on a daily, their teaching and learning on a day to day basis.

I *Then next question has two parts. Firstly what type of digital tools or platforms do you provide to teachers and learners to facilitate digital learning?*

R1 Firstly every educator in the school has a laptop, every learner has a tablet, all classrooms are fitted with the, a projector which encourages learning, err, learner… educators have electronic, err…e-textbooks that enhances learning. But what is also important is because they are using these devices we can, err…track, err , the manner in which they teach.

I *Secondly how do you support teachers and learners digital challenges in the classroom?*

R1 There's a lot of ways in which we can, err, assist the learners and educators when they have challenges, err. Basically we can the laptop and what is installed into the laptop, err, will indicate to us that are they preparing the lesson that they should, or are they using devices or materials supplied by the Department of Education the way they should. And also, err, if they do not teach the way they should or not, cer…err, covering the annual teaching plan on a weekly basis or the assessment that can be tracked, err, using the dashboard and we can go into the classroom, err, inform the educators that they are not keeping, err, they are not completing what they're supposed to complete on the weekly or…or on a daily basis.

I *Before we conclude is there anything else that you would like to add?*

R1 Look one other thing that was mentioned the State of the nation address by the president of the country and in Gauteng by the MEC for education, the fourth industrial revolution has an important as… important, err, impact now on schools. Curriculum has to change, not the subject that we are, we are teaching, we are going to get robotics and others, coding and so forth. But what is very very important is this: All teachers and especially leaders, principals, err. have to go for constant training as far as, err…digital technology is concerned. In our district, err, we are the pilot, err, schools.as far as embracing digital leadership, err, and we have the found the benefits of it, err, not attending this workshop, not keeping abreast with this…this type of digital…digital…digital technology we will find that you will definitely not be able to run our schools effectively.

I *Thank you for your time and participation.*

(Inaudible)

INDIVIDUAL INTERVIEW AT SCHOOL Y

DATE: 2019-02-18

TIME: 14H00 – 14H30

PLACE: Principal's Office

I *My name is Judy Dasruth and I'm a researcher. Thank you for participating in this research project. Every effort will be made to protect your confidentiality and privacy since no names will be used that will allow you to be identified. Please be comfortable and feel free to express your views. I will now proceed with the interview. In this particular interview, I'm going to use the word digitals instead of technology. As digitals extend beyond technology such as all your devices and products that we use to simplify our daily lives, it is actually more about a focus on your behaviours and practices that arise from these technologies. In your own words, please describe your leadership practices that encourage digital use at this school.* (Siren). *Let me repeat the question. Please describe your leadership practices that encourage digital use at this school.*

R1 In my leadership practice, eh, utilizing the, did it, did digital utilization in our school? Eh, our school is, um, informal settlement school whereby it is surrounded by lots of unemployment, a parents and we wish to utilize. digital equipment for our learners? Unfortunately only the admin portion and some of the educators do utilize the digital system. So with the learners currently we are not, they only utilize that privately so at their places with their own parents' cell phones, their TV and other technological digital matters. But here, in our school (name of school), we all utilize that, or a data capturing for learners, eh, we've got the system called SASAMS and we also utilize that for a, if we've got record for parents information, a assessment for learners, curriculum matters all those stuff. And then now for classroom curriculum matters. We don't have that as per class.

I *So in other words, uh, are you saying that the limited digitals at your school limits your digital practices?*

R1 Definitely. Definitely show because only the staff people utilize that one and the more so the admin staff are the ones and also myself, we utilize the digital systems, but with the learners and the parents, unfortunately we don't have that connection and more so it's a challenge us in the area. In terms of a network, there's none. Internet is a challenge where we are er, we have to devise some means to have connection.

I *Okay. Uh, the limited digitals that you do have currently for the admin, has that in any way influenced the day to day running of your school?*

R1 They do influence the day to day running of our school and they make us our work so easy because we are able to capture learner information, we are able to do assessment, we are able to communicate with parents even though we still utilize the system of giving out, issuing out letters to the parents. But it does assist. It does assist us a lot. Eh, we do give calls whenever there's a need, especially when the child is sick. So we do make a call and invite a parent and sometimes we do send SMSs on our phones to invite the parents because sometimes learners, don't give information to their parents, especially newsletters. So we know those kind of learners who do not. And as the principal of this school, I also have my WhatsApp group. Some parents, they do have eh, they utilize that and we do communicate on a WhatsApp and some we do communicate on email. Those who are capable of doing that but not all of them. Hence we've got almost 1,147 learners in our school so as per communication that I have that number. Not all of them are included.

I *You mentioned WhatsApp. Is there any other social media platforms you use to communicate with parents, learners, other stakeholders besides WhatsApp?*

R1 Uh, no we don't utilize the other social media. Like first Facebook, I do have the school Facebook, but you know, these days it's quite challenging. You need to get permission before you can outsource information as per the child. So we don't just, er, send out pictures of learners. We issue out consent forms so that we can be able to be given permission to the parent. If they do allow us to eh, post to those pictures of their children. So even the newspaper, if we have a activities or events around the school, there are consent forms that we issue out. But more so in the first Facebook, we don't utilize it so much.

I *Do you personally use any of these social platform media platforms to learn to do any sort of networking?*

R1 I do. eh. I do. I've got twitter. There's another one for a principal development that, I mean there's motivation one that I mean, eh so there are many and I also have the one for mmm eh for lesson plans because I need to understand eh, in terms of the changes that are happening in the curriculum as we know that we are moving in the eh, 21st century situation. So one has to adapt to the situation. So I do utilize many, many, many mostly so of their system. Digital one they do as... assist and especially with the grades threes and six in mental maths also there is that portion that way I'm able to download some of the mental based activities to assist some of the educators on how to assist their learners in terms of achieving the mental maths in their classes.

I *You spoke a lot about the activities you engage yourself in on social media. Are these activities, er, personal or is it mandated by the department?*

R1 No, these are personality ones. For me it's all about personal development, not mandated by the department per se. The only ones that I would say they are mandated by the department are the reports that we need to re... give feedback to the, eh, head of fees. Uh, we've got our triple D system whereby every Friday we upload and then on Saturday we'll get feedback and one has to log in and check in terms of the running of the school, how did we perform per week? Have we uploaded the task? How was the educator attendance? How is the learner attendance also? And then how is the assessment in the school and do who are the learners who need immediate attention and who are the learners who'll be dropping out soon? So those are the kinds of things that

I utilize. Those are the mandated one. So I utilize that eee... for the department. Even then there is the departmental report also every day that we need to send to head office. So those are the ones that deal with educational system. But the other ones, they are my personal development, like a SAPA that I'm the group that I'm in. So it's all about me that side.

I *Uh, tell me in terms of using all the digitals to, er, engage in your personal development, has there any been, has there been any sort of development for you personally in terms of building your digital skills to use these tools available from the department or from other initiatives?*

R1 Uh, from the department, there is training that I did attend, er, previously, so before I become a principal I did a certain um, training. It was good training when the SASAMS starts, I was one of the, those educators who were attending that. So I would say I was the lucky one because of, it was a fruitful training when it started. And unlike now, because it took almost eh, two to three weeks for, for, for, to understand the SASAMS, unlike now whereby people will only attend for a week or for a day in for 30 minutes or an hour. So I was the fortunate one because it was organized in a form of different stages whereby different modules were outlined. So it was easy for me to understand SASAMS even now. How does each from their own from the beginning and then in terms of its development, so I'm easily able to adapt on it.

I *I would now like to tell you about digital leadership. Digital leadership is about establishing relationships, influencing others, and initiating change through the use of digitals. It requires a dynamic combination of mind-set, behaviours and skills to change or improve the school's digital learning and teaching culture. Digital leadership connects leaders with staff, learners and other stakeholders through the digital tools and through social media platforms. Digital leadership allows for learning to take place beyond the walls of the classroom in connected online spaces in order to facilitate digital age learning that is relevant for the 21st century. Now what are your views about this concept that I've, er, spoken about now with regards to digital leadership?*

R1 Yeah, it's true. It does, eh, make one to connect with other people and it does, especially with, er, learners now. If you can look around the educational system, our learners are no longer interested in textbook. When you get into a classroom, you'll find that when you talk about a textbook open page, a one or open page, so and so. Some of the learners they become bored, but when you come in class, you utilize your digital, eh, systems, they become interested and they do pay attention and they learn easily, so and it also save time in a school system whereby activities learners are intrinsically motivated and they will be able to work on their own. And they know they're able to save, er, er, and manage time on by themselves because they know that I have to do this activity for so much time. If I spent more than that, the activity will be able to drop out.

I *Uh, you mentioned that they have limited digital tools in the classroom, but do you have any that has changed in the classroom from the last five years? Digital tools in the classroom?*

R1 In my previous, eh, experience, the school that I was, if I would say it was a fortunate school because even though it was a rural school whereby, eh, the rural, er…development managed to donate 40 iPads for the learners and that eh, it makes learners to come to school early in the morning because they knew that the first lesson

in my class will be those iPad whereby I was teaching English to them and those iPad will, er, the way in, there were stories installed in them, eh, there were books that they have to read in those iPad. There were maths activities that needs to be done in there, in those iPad. So they used to know that each and every day when we have to come to school, we are going to redo to be given an iPad to read a story or to play a game. That was a free lesson for everyone. That moment. So no one will be, er, chosen that you don't belong to this class or whatever. So it becomes interesting for the learners. So there'll be ever, there'll be ever coming to school. They won't be late, late arrival was not there and absenteeism also was not there and a discipline was also there because a learner will be brought to the office now and then knows that he or she won't be allowed today. Free learning a period.

I *Okay. The next question has two parts. Firstly, you've mentioned already the type of digital tools that you have in the class, but does any of these tools allow for learners to engage in connected learning, which is not just simply within the class, but that extends out of the class, networking with other schools and so forth.*

R1 Yeah, they do allow, unfortunately we don't have that, but in my experience that I have in terms of other schools that I know, it does allow other learners to, to work with other learners from up even abroad. We did have, in my previous experience, we did have an, a network communication with eh from abroad whereby, err… it was a project per se, in terms of the digital err…connection. So we had this school and our school whereby we need to compose a song. So we were able to com... to, to do our song, this side in, in South Africa and the way in America they have to compose their own song. And we had a day whereby we need to combine come together and sing that song. So it happens that in South Africa it was that, you know, the different times it was, er, six o'clock yeah. And it was almost round about in the morning for them. So those learners were able to see them. They were all good to see us and were able to sing the very same song in our mother tongue and in their own mother tongue. So it was a joint together song. So things with digital, eh, eh, eh, system, they do happen. It's possible. So you know, even exchange program learners are able to find friends from other countries and communicate with them.

I *Okay. Er, in terms of challenges that learners and teachers have in the classroom proper. With digitals, maybe the use of digitals, how to use it, how to teach. Have, er, you have those challenges at your school and how do you deal with it?*

R1 Ah, in terms of that? Eh, with teach us, they differ per age. There are those who are able, even if they might be a grown up, er, people, but there are those who are unable because of their ages. So some they're afraid of the digital system to utilize to use them and someday we'll be able to try to attempt to utilize those systems. And then there are those who are versatile to utilize them. And with the little ones, the kids, the learners, their problem is that they need discipline. They should be norms and standard on how and when to utilize those, eh, digital system, because, eh, sometimes they go out of a program and they do their own programs as they want to. So they need control. That is the main, er, er, er, problem with them, the utilization part of it. So they need to be taught when and how to use them and when to bring them to school and when not to bring them to school. So they should be thorough monitoring and supervising.

I *Are there any safety issues with regards to digitals at your school?*

R1 Whoa. That's the challenging part. Especially with eh, in my school right now. Oh, I have to carry them everyday when I go home because there's no safety around here .Eh, anything is possible. Burglary does take place and you can't leave them, especially in a mobile school like this one. Eh, we don't have, er, safety people that scholar patrollers. We don't have, er, patrollers around, school. So we carry them. [inaudible]

I *In the professional development for the teachers, how do you ensure that, when it comes to technology and digital?*

R1 Ehh, the teachers themselves, we did improvise. We as a newly school like this one, we managed to give each and every face that [inaudible] the digital system so that they can be able to utilize them in their different faces and so that they can be able to develop one another also. And especially in the syst... in the SMT, eh, staff, all the SM the leaders, they do have their own because they have to no matter, whether you know or you don't know whether you are familiar with technology or digital, eh, eh, system, you have to utilize them that. And so in our school that is the easiest mode of communication, so we use mostly, so the digital, er, system, one hour, we've got our school WhatsApp group and then we've got the emails that I would send to the different HODs in different phases because we are also trying to be like the MEC, to be paperless also. So we are, am able to circulate the emails to their, er, their, er, their, their cell phones or their iPads that they have. Even their laptops that they do have.

I *Do you, uh, um, provide opportunities for other people besides SMTs to engage in digital leadership at your school?*

R1 We wish to do so. If we have enough equipment we will be able to, we can be able to try and eh, welcome other people to come and teach them and show them how to utilize those system. But unfortunately, due to lack of equipment, eh, we can't. Maybe in future, once we have the proper structure and the proper equipment, we will be able to do that.

I *Before we conclude, is there anything else that you would like to add?*

R1 Not per se. No. I'm quite, er, satisfied.

I *Thank you for your time and your participation.*

INDIVIDUAL INTERVIEW AT SCHOOL Z

DATE: 2019-02-18

TIME: 15H00 – 15H30

PLACE: Principal's Office

I *My name is Judy Dasruth and I am a researcher. Thank you for participating in this research project. Every effort will be made to protect your confidentiality and privacy since no names will be used that will allow you to be identified. Please be comfortable and feel free to express your views. I'll now proceed with the interview. In this interview we will predominantly be using the word digitals instead of technology as it extends beyond gadgets and applications and products. It's more to do with the focus on behaviours and practices that arise from the use of technology. Please describe your leadership practices that encourage digital use at your school.*

R1 With regards to digital leadership at the school. I think in these days it's, it's imperative that you make use of the, the digital, um, structures that's available. There's many aspects that you can use. Many of them are free, but that makes it actually easy for everybody to have access to it. Not like in the past where there was, it's, er, the licenses that were attached to some of the digital tools that you used were very expensive. Nowadays with the schools, it's easy to have access to because its, it's free. Microsoft, for example, provide services like that three, six, five is free and all of the teachers can access it. Part of that is the email addresses that's available and what the sense of that is, especially in our school, we make use of a lot of, of email. The challenges we face is for example time, so the time that you have to actually conduct a meeting in the morning is five to 10 to 15 minutes and most of the time there's challenges that arise and then you actually don't have time to get to the core of, of the days activities. So it's easy to, to communicate, er, for example, er, a week plan, a month plan, a year plan, term plan. Er, then added to that is communication that's received from the department. So it assists you with communication so people don't have an excuse these days that they didn't know. Um, so morning matters, even corresponds with the department, as I said, it's freely, it's easy to, to give the people access to it. So we definitely make use of the digital tools to, especially for with communication. Um, and, uh, I think thats what mainly what we do.

I *You mentioned the use of emails, SMS. Is there any other platforms you use social media platforms to communicate?*

R1 We for the, with the staff, that's the main one that we use, but for the parents, there's also other, um, tools we have to communicate at school its a, it's a, it's a platform that you can use to communicate with the, the parents. Er, there's photos available, newsletters. It's if there's any important, um, information that you, that you, that you need to send to people in a hurry, then it's, you can make use of the, the D6

communicator. Um, we have a Facebook website, uh, a page, not the website, the Facebook page where the people can, where we, we use it as a communication method, but at this stage it's not a, we use it, but it's not, uh, uh, an effective tool. We have a website as well, but the challenges obviously if that, because that is the, the management and the up, up keeping of it, that it's relevant and up to date, that's always a challenge. Um, but yeah, so we have the Facebook, we have websites, communicator. Um, we don't have Twitter, um, Twitter's a bit I, I, my own opinion is a is a risk to use Twitter as a platform of communication or to express a view, but yeah.

I *You speak a lot about communication. Is there any other, er, aspects that you use these platforms for? For example, your own personal learning?*

R1 Yes, definitely. Um, is there, so like I've said, um, we knew at the university it's easy to get access to the, to the resources, but we knew not at university you don't, have access, access to all the journals and, and, and dissertations, minor dissertations, that's a bit more tricky but luckily there's some, er, er, tool like the Google scholar, Google translate. I mean you can use that a lot, er, for, for research, but what I like a lot, especially in the teaching profession is to, is YouTube. YouTube is definitely a powerful tool um, reason being, you can present content that's on the level of whoever your audience is, if it's a child there's, there's definitely loads of video available and you can actually choose, there's a variety. You're not bound to just one. So YouTube is also something that, that I use a lot as a, as a resource. And obviously to google scholar and Google as well is a, is also a good tool, but obviously there's many more. Um, there's also apps that you can use because they make it easier to use those with all the apps you can install on your smartphone device for touch of a button, you can get access to people all over. Even with communication as well, there's many, many apps available. I know of the Moodle is one, but we investigating it for the, for the future, but at this stage it's, there is some challenges. We don't use tablets. Obviously at the primary school it's, it's difficult with the learners, bringing it to school and so on. It's definitely something to look at for the future, but not, not at this stage.

I *The professional development that you speaking of, is it done on a personal level or are these activities mandated by the department of education?*

R1 We have the, the CPTD that's mandated, mandated by the, the department, but we also do some development at school, um, mainly to out, to outsource it to service providers from, from outside the school. Um, and they also make use of technological devices or digital devices. Er, the presentations that they present with the PowerPoint and so on. Um, but uh, development is definitely, um, with the digital leadership, I believe it's, you can definitely make use of those services to enhance it, even to bring it more up to the level of the audience, especially now. What we experience is, many of our staff is young and that is why they call it the Y generation. Um, you need to negotiate these days. You cannot tell them listen ABC, there's nothing like that. So with regards to the management, you need to be on par with the latest trends and they can assist you a lot with that.

I *Okay. Do you ever experience any chall, challenges with your own digital skills in terms of how you use technology, how you access technology, the use of the devices? Do you experience any challenges with regards to your own digital skills? And if so, how do you manage that?*

R1 At this stage, luckily, um, I don't have experienced challenges. We are fortunate to have access to internet and to have the devices available. And if needs be, we can, if I have a challenge, I can consult with other staff members or go to professionals at the, for example at Vodacom or wherever to, to assist us and it's easy to download latest app. I think challenges that you might experience is going to be financial [Laughs]. Sometimes it can be, you, you can be in this financial position with you where you cannot have access to it, but, but we are fortunate at this stage that we don't have issues. With regard to the devices and so on. It's not, not if, if they, like I said, if there's problems, the help functions these days, YouTube you're going to go on to, to, you have to look at a video or Google can give you, er shortcuts. If you look for, if you need some formulas for your Excel sheet or that you can Google it to get tutorials. So, there's many ways that you can, if you don't know, you can access the, the digital courses available.

I *Okay. The leadership practices that you have described, has it influenced the day to day running of your school?*

R1 With the digital tools that you have available, it really makes it easier. Um, we've added to that. You can, you can save money as well. When you think about the use of paper, you can limit the use of paper, the, the time that you need. So you can email a staff member on a Sunday afternoon as soon as you receive, so you're not bound to, to be at school. You can access it anywhere. So, um, that helps a lot too for people to be prepared. If they, if they read it, if they don't read it, at least then they can quickly access it in the morning of, or at the start of the Monday morning or wherever, and is actually a good tool as well, not just for communication, but sometimes you would want to send a, a personal message or something to, to the staff. We also have WhatsApp groups that's part of the digital tools that we use to communicate. You have your, your management that can have a WhatsApp group your, your classes, the grades the, the leaders. So it's, it's actually, uh, the WhatsApp, is another aspect that's can also be used, so it makes it convenient actually. Sometimes it can be a nuisance. Um, yeah,

I *I would now like to tell you about digital leadership. Digital leadership is about establishing relationships, influencing others and initiating change through the use of digitals. It requires a dynamic combination of mind-set, behaviours and skills to change and or improve the school's digital learning and teaching culture. Digital leadership connects leaders with staff, learners and other stakeholders through tools and social media platforms. Digital leadership allows for learning to take place beyond classroom walls in connected online spaces in order to facilitate digital age learning that is relevant for the 21st century. What are your views about this particular concept of digital leadership that I've described?*

R1 I believe it's a way to move forward for the future. Um, er, I believe in uh, the government schools that we are at, it can be a challenge because, er with regards to the infrastructure and um, another aspect is the, the quintile the quintile that the school is allocated. For example, we have a quintile five. Unfortunately most our learners come from informal settlements, so, [laughs] that's immediately a challenge. It is, its a, I won't say its a utopia at this stage. But its definitely it is achievable. You can achieve it. It is something we working towards at our school to get that in place, where it, like you've explained. Um, I see there's a, a classroom without walls and er, office without walls, that you can actually link to the world anytime, any place, anywhere, immediately, even if the person is in the U.S. or in New Zealand or Australia. So, but to have that you must

have the infrastructure in place and, and the backing, obviously the SGB backs us but we have challenges with regards to finances. It's not an excuse but it's something that we looking at and fortunately the is people that can help us and we are currently involved with some of the companies to assist us. So we need to get people on board either through sponsorships or to see how we can get it at the most reasonable prices. Fortunately we are a school so we can negotiate because we have cl...clients that they want. Your Vodacom, your MTN and so on, so if you can negotiate with them, for example, the Wi-Fi, is, is the first step I believe, to get to that place where you can have every classroom without walls, if you don't have Wi-Fi, you cannot have access to the internet. So the internet is, is, definitely one, one of the things you cannot go without. So if you can get that in place, obviously your projectors, your in, in your interactive boards. Most all of our staff, we, we provided them with laptops. It's just a matter, its, you've got to get this in place, those, those phases in place so that you can actually get to that, that place where you have the classroom without walls or the staffroom or the office, so that you can communicate with whoever is available.

I *You speak about the tools and the Wi-Fi. Has, uh, any of those things being currently implemented in your classrooms and has it, if so, changed the outlook of the classroom or the culture of teaching and learning in the culture in the classroom.*

R1 It has a huge impact. Um, like I've said, mmm... we have the 'Y' generation that we have. Um, if you don't have it, you're going to have discipline problems and I don't want to blame and shame, (laughs), but I believe our curriculum doesn't make it to, to assist us with lots of discipline because we challenge, um, assessment or we, we, we chasing, not challenge, chasing assessment that other than getting to the learners and, um, I think we, we missing them and this is an ideal tool to actually help them to, to get to the next level, especially with regards to the, to the digital use, the Wi-Fi especially now, we don't have, in our classes, that's why I say that's the next step. We have it in our admin block so the staff, they have access to it so they can download the YouTube videos or whatever they need, worksheets, et cetera. They and they can, they have the facilities to print, download and, and, and so. We are already trying to do it and from my personal experience, um, I've seen the impact of, of bringing those aspects into the classroom. You definitely gain on, on the discipline. We don't have challenges with that. The learners are involved, they, there's interaction taking place. And sometimes the only, the only time that they will see that will be in your classroom. They won't have the, the exposure at home, many of them, many of the learners.

I *The next question is two parts and you've touched on it a bit, but besides the Wi-Fi, what other tools have you currently implemented into the classroom that may not necessarily use Wi-Fi but are digital?*

R1 The, the digital part that we use at this stage, it's only, we, we use the laptops and the projectors mainly. Uh, um, we didn't, you know its er, cost-wise it's a challenge to have the whiteboards in all the classrooms, so we, what we've done is we've used the old green boards and we just, er, what's it, glued the vinyl, those vinyl sheets that you can get. We did seven classrooms, where, for the, the price was even less than to purchase one of those whiteboards. So it's, there's cheaper options available for the same quality. So, um, so the chalk, most of the classrooms don't use chalk anymore, we will have that

at the foundation phase where they chalk and talk. But that is the seniors, we mainly have the, the white boards in the class with the projectors.

I *Uh, Digital usage in the class includes teachers and learners. They often encounter a lot of challenges. How do you support your teachers and your learners, should digital challenges arise?*

R1 Challenges that might arise, er, can be something like load shedding, (Laughs), where they, [inaudible] when the power's off. So, um, and that's un... unfortunate if that could happen, that's a huge challenge. Can be, um, other challenges can include, er, connectivity from your PC to the, to the projectors. Um, so we try to give the staff training, some, some basics that you can do, but sometimes, that does... doesn't help and then you need to get the experts in. Um, other challenges can be, for example, hardware that, um, that can have some, some problems, for example, your projectors, the globe can run out or they, their lifespan has come to an end and you need to either replace them, the globes or the projectors or what the case may be. Um, so that's, that's mainly some of the serious challenges. We are fortunate, not to have many others, but it's just those, those basic, basic, basic things that can be a challenge.

I *Before we conclude, is there anything else that you would like to add?*

R1 [Inaudible] There's nothing I can think of at this stage, but yeah.

I *Thank you for your time and participation.*

Appendix 8: The Physical Research Audit Trail (Carcary, 2009)

I detail here, appropriate audit trail linkages (Cutcliffe & McKenna, 2004 cited in Lincoln & Guba, 1985) from the research of Carcary (2009) that I have contextualised to this study, to strengthen confirmability.

Physical research audit trail step one: Identification of the research problem

During the master's and PhD research capacity workshops at the University of Johannesburg, I discoursed with a number of the lecturers presenting these workshops to identify a suitable area for study. Further to this I did extensive reading of education leadership and management literature to narrow down sub areas of study within this broad field. Based on my conversations with my lecturers and my reading I came across study areas that I found appealing such as visionary leadership, 21st century leadership, and agile leadership, but from all these areas of study the one that peaked my interest the most was digital leadership. As I began to read more about digital leadership, I became increasingly intrigued with the topic as it appeared to best complement digital age learning which I am passionate about. I found that principals' digital leadership practices was a contemporary issue that was not extensively researched across the education sector at the time especially in South Africa. This area of study was problematic as principals' current digital leadership practices that effectively impact digital age learning in schools were not implicit in the literature (Aksal, 2015; Domeny, 2017; Uğur & Koç, 2019; Zhong, 2016). I decided, in conversations with my supervising professors, there was a need to explore this topic, as the impact of principals' current digital leadership practices in South African schools was not clearly understood.

Physical research audit trail step two: The research proposal

Based on this research problem, I developed a proposal and submitted it to my supervising professors who provided valuable feedback that assisted me in refining it. I then submitted my proposal to the Higher Degrees Committee of the Faculty of Education at the University of Johannesburg for approval. My proposal included a context or background to the problem; a description of why the context was problematic thus identifying the "gap" my study would be addressing; a deliberation on the literature about the problem; research paradigm; research design; research method; sampling; data analysis methods; trustworthiness; and list of references used. The proposal was also submitted to the Gauteng Department of Education to conduct research in the Gauteng West District. The study was approved by both the Higher

Degrees Committee of the Faculty of Education at the University of Johannesburg and the Gauteng Department of Education in 2019.

Physical research audit trail step three: Reviewing the literature

I conducted an in-depth survey of national and international literature on digital leadership. I focused on the successes and challenges of digital leadership practices in schools to help me understand aspects surrounding the practical implementation and the impact of digital leadership on digital age learning. Due to limited research in this study area, the literature review revealed that the body of digital leadership knowledge in the education sector was still in its infancy at the time; there was lack of consensus among researchers on how digital leadership impacted digital age learning, and there were severe limitations on how digital leadership practices were evaluated. Further, digital leadership practices amongst principals were overshadowed by traditional leadership practices which moderated principals' behaviours in schools (Pollock et al., 2015) and focused on accountability (Alvoid & Black, 2014). Thus, traditional leadership practices maintained the current status quo of learning in schools, limiting opportunities for innovative leadership practices to effectively support digital age learning (Grand-Clement, 2017).

Physical research audit trail step four: Designing a research framework

I then embarked on designing a research framework to support my collection of empirical evidence. Using interpretive research strategies, I first gathered high-quality data from focus group interviews with teachers about their perceptions of principals' digital leadership practices in the context of their schools. I then interviewed principals from the three schools for data triangulation together with data collected from the document analysis in each of the three schools.

Physical research audit trail step five: The interview schedule

The focus group interviews were the primary source of data collection. In defining the research problem, an initial interview schedule was prepared. A pilot study of the interview was conducted to determine participants' understanding of the questions and the depth of the research inquiry and the schedule was subsequently refined. The individual interview schedule conducted with principals comprised questions that sought to triangulate data collected from the focus group interviews and document analysis.

Physical research audit trail step six: Selection of interview participants

Through purposive sampling, described in detail earlier in this chapter, three schools were each with a group of six teachers were selected to participate voluntarily in this study. The participants selected had in-depth knowledge of their school context which included the current and historical day to day running of their school, student population and background, school infra-structure, school communication protocols, current and historical teaching and learning at their school, and principal's leadership practices perceived to be digital in nature.

Physical research audit trail step seven: Evidence collection

Three focus group interviews, that lasted between 35 and 65 minutes were conducted, recorded, and transcribed. The transcriptions were found to be accurate and authentic after being thoroughly checked against the recordings. Thereafter, a document analysis was conducted of the schools' public profiles which included one official website and two official Facebook profiles for evidence of digital leadership activities. I then interviewed the principals of the same three schools. The data from the interview transcripts of both the focus groups and individual interviews and document analysis were analysed, interpreted, and used to develop this study's primary narrative.

Physical research audit trail step eight: Managing and analysing the empirical evidence

In Chapter Three I documented how I managed the empirical evidence in terms of collecting and transforming the data from raw to processed to analysed and how I described the interpreted data in an understandable way (Surkis & Read, 2015).

Braun and Clarke's six-phase framework, discussed in detail in Chapter Three, was used to analyse the audio recorded data collected from focus group interviews. Ideas emerged from the interview transcripts after constant reading, reflection, reviewing, and comparison of the data regarding participants stated and implied views. These ideas were then coded into themes after constant reflection on the data to confirm if the themes authentically originated from the participants (Carcary, 2009), whether inferences based on the data were logical as well as the appropriateness of the codes and themes (Cutcliffe & McKenna, 2004 cited in Lincoln & Guba, 1985). Furthermore, feedback from my supervisor on this issue of authenticity of participants' responses in the findings helped to cement confirmability. The data from the focus groups were triangulated with individual interviews with principals and document analysis.

Physical research audit trail step nine: Adopting a narrative approach

The themes and sub-themes from the coding process were the basis for developing the primary narrative in this study. This narrative was substantiated by referencing participant's statements together with the exact line numbers from the interview transcripts and contained both latent and sematic levels of interpretation.

I employed extended reflection on the primary narrative by considering "what the text said, why the text said what it did and what my understanding was of what was taking place thus the primary narrative was reduced to the principle research findings" (Carcary, 2009, p. 21) that were based on the data. This process expanded my interpretation of the findings by enabling me to express a more profound understanding of the research participants' views.

Physical research audit trail step ten: Distillation of a new theory

I searched and pondered on the findings I had arrived at both separately and as a whole to identify any relationships between key findings which I then further reflected on to refine this study's theoretical conclusions (Carcary, 2009:21) which added to the existing body of digital leadership theoretical knowledge. In recognising the degree and incidence of my bias (Cutcliffe & McKenna, 2004 cited in Lincoln & Guba, 1985) in Chapter Five, I used my field notes which included a reflection of my subjectivity that may have found its way into the findings of this study.

Appendix 9: Digital Tools and Platforms

I briefly describe a few popular digital tools, and platforms, below:

- Multi-media digital devices such as *tablets*, *smart phones* and *laptops* in and beyond classrooms to take notes, do class assignments, load and access digital textbooks, play educational games, watch lessons, and connect to digital set-ups in the class for connected learning (Blackburn-Dwyer, 2016; Sheninger, 2014).
- Projectors, smart boards and smart tables for dynamic lessons, increased student engagement, and shared learning by connecting to various devices (Blackburn-Dwyer, 2016; Copper, 2018)
- Social media platforms like Twitter, Facebook, WhatsApp, and Instagram allow students to connect, create, and share educational values (Sheninger, 2014).
- YouTube, a video hosting platform, which allows a person to watch, discover, learn, connect, inform, and share original user created videos in classrooms (Wilson, 2015).
- The flipped classroom which inverts learning beyond classroom time through online platforms allowing students to progress at their own pace; do homework in class in order to give teachers a better understanding of students challenges and learning styles; get customised learning in real time; improve achievement, engagement, and collaboration (Fulton, 2012).
- Augmented Reality is a technology that layers computer-generated enhancements on top of an existing reality in order to interact with it whilst Virtual Reality is an artificial, computer-generated simulation or re-creation of a real-life environment (Schrock, 2017). These realities according to Schrock (2017) immerse users by stimulating their vision and hearing so that they feel like they are experiencing the simulated reality which creates deeper understanding and greater engagement (Schrock, 2017).

Appendix 10: Editor's Letter

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To whom it may concern

This letter serves to inform you that I have done language editing, proofreading, and reference formatting on the master's thesis

Teachers' Perceptions of their Principals' Digital Leadership Practices in Gauteng West

by

Judy Dasruth

Nikki Watkins

Date: 8 September 2020

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